

**Report Number: 208-TRC-03-001**

**Safety Compliance Testing for FMVSS 208**

**Occupant Crash Protection**

**General Motors Corporation**

**2003 Chevrolet Suburban**

**NHTSA Number: C30104**

**TRC Inc. Test Number: 021114**

**Transportation Research Center Inc.**

**10820 State Route 347**

**East Liberty, OH 43319**



**Report Date: Dec. 19, 2002**

**Final Report**

**Prepared For:**

**U. S. Department of Transportation**

**National Highway Traffic Safety Administration**

**Safety Assurance**

**Office of Vehicle Safety Compliance (NVS-220)**

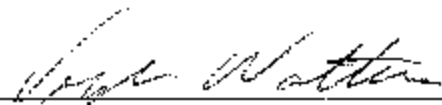
**400 Seventh Street, S.W., Room No. 6115**

**Washington, DC 20590**

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Report Approved By:

  
\_\_\_\_\_  
Virginia L. Walters, Project Manager  
Transportation Research Center Inc.

Date 12/16/02

Final Report Acceptance By OVSC:

\_\_\_\_\_  
Date \_\_\_\_\_  
Contracting Officer's Technical Representative (COTR),  
NJHSA, Office of Vehicle Safety Compliance

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16. Abstract  Compliance tests were conducted on a 2003 Chevrolet Suburban, NHTSA No. 30104, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208-11 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows:  None			
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## Section 1

### Purpose of Compliance Test

## PURPOSE

This Federal Motor Vehicle Safety Standard 208 compliance test is part of a program conducted for the National Highway Traffic Safety Administration by Transportation research Center (TRC Inc.) under contract DTHH22-02-D-08062, Task Order VRTC-DCF2525. The purpose of the test was to determine whether the subject vehicle, a 2003 Chevrolet Suburban, NHTSA No. C30104, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; indicant FMVSS 212, "Windshield Mounting"; indicant FMVSS 219, "Windshield Zone Intrusion"; and indicant FMVSS 301, "Fuel System Integrity". The compliance test was conducted in accordance with OVSC Laboratory Test Procedure No. TP-208-11 dated August 22, 2002.

## Section 2

### Tests Performed

## TESTS PERFORMED

The following checked items indicate the tests that were performed:

- ☒ 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
- ☒ 2. Air bag labels (S4.5.1)
- ☒ 3. Readiness indicator (S4.5.2)
- ☒ 4. Passenger Air Bag Manual Cut-Off Device (S4.5.4)
- ☒ 5. Lap belt lockability (S7.1.1.5)
- ☒ 6. Seat belt warning system (S7.3)
- ☒ 7. Seat belt contact force (S7.4.3)
- ☒ 8. Seat belt latch plate access (S7.4.4)
- ☒ 9. Seat belt retraction (S7.4.5)
- ☒ 10. Seat belt guides and hardware (S7.4.6)
- ☐ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart N)
- ☐ 12. Suppression tests with Newborn infant Subpart K dummy (Part 572, Subpart N)
- ☐ 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P)
- ☐ 14. Suppression tests with 6-year-old dummy (Part 572, Subpart R)
- ☐ 15. Test of Reactivation of the passenger Air Bag system with an Unbelted 5<sup>th</sup> Percentile female dummy
- ☐ 16. Low risk deployment test with 12-month-old dummy (Part 572, Subpart N)
- ☐ 17. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P)
- ☐ 18. Low risk deployment test with 6-year-old dummy (Part 572, Subpart R)
- ☐ 19. Low risk deployment test with 5<sup>th</sup> female dummy (Part 572, Subpart O)
- ☒ 20. Impact tests
  - ☐ Frontal Oblique
    - ☐ Belted 50<sup>th</sup> male dummy driver and passenger (0 to 48 km/h) (S5.1.1.(a))
    - ☐ Unbelted 50<sup>th</sup> male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
    - ☐ Unbelted 50<sup>th</sup> male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(h))
  - ☐ Frontal 0°
    - ☐ Belted 50<sup>th</sup> male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
    - ☐ Belted 50<sup>th</sup> male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
    - ☐ Belted 5<sup>th</sup> female dummy driver (0 to 48 km/h) (S16.1(a))
    - ☐ Belted 5<sup>th</sup> female dummy passenger (0 to 48 km/h) (S16.1(a))
    - ☐ Belted 50<sup>th</sup> male dummy driver and passenger (0 to 56 km/h) (S5.1.1(b)(2))
    - ☐ Unbelted 50<sup>th</sup> male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
    - ☐ Unbelted 50<sup>th</sup> male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
    - ☐ Unbelted 50<sup>th</sup> male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
    - ☐ Unbelted 5<sup>th</sup> female dummy driver (32 to 40 km/h) (S16.1(b))
    - ☐ Unbelted 5<sup>th</sup> female dummy passenger (32 to 40 km/h) (S16.1(b))
- ☒ 40% Offset 0° Belted 5<sup>th</sup> female dummy driver and passenger (0 to 40 km/h) (S18.1)
- ☐ 21. Sled test: Unbelted 50<sup>th</sup> male dummy driver and passenger (S13)

- ☐ 22. FMVSS 204 indicant test
- ☒ 23. FMVSS 212 test (indicant)
- ☒ 24. FMVSS 219 indicant test
- ☒ 25. FMVSS 301 frontal test (indicant)

For the crash tests, the vehicle was instrumented with 8 accelerometers. The accelerometer data from the vehicle and dummies were sampled at 12,500 samples per second and processed as specified in SAE J211/1 MAR95 and FMVSS 208, S4.13.

The dynamic tests were recorded using high speed film and digital motion picture cameras.

The vehicle appears to meet the performance requirements to which it was tested.

## Section 3

### Injury Result Summary

# INJURY RESULT SUMMARY FOR CRASH TESTS AND/OR LOW RISK DEPLOYMENT TESTS

NHTSA No.: C30104

Test Date: 11/14/02

VTN: 3GNEC16Z53G108730

Frontal Crash     

Offset Crash X

Low Risk Deployment     

Impact Angle: 0

Belted Dummies: X Yes      No

Speed Range:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

Test Speed: 40.0 km/h

Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

Test weight: 2684.3 kg

5<sup>th</sup> Percentile Female Offset Crash Test  
Vehicles certified to S16.1(a), S16.1(b), or S18.1

Injury Criteria	Max. Allowable Injury Assessment Values	Driver	Passenger
HIC15	700	262	290
N <sub>te</sub>	1.0	0.40	0.35
N <sub>fr</sub>	1.0	0.08	0.28
N <sub>ce</sub>	1.0	0.02	0.03
N <sub>ef</sub>	1.0	0.10	0.28
Neck tension	2620 N	782	1059
Neck compression	2520 N	140	55
Chest g	60 g	20.2	22.8
Chest displacement	52 mm	20	13
Left femur	6805 N	3320	1398
Right femur	6805 N	1241	1244



## Section 4

### Discussion of Test

## DISCUSSION OF TEST

The airbags did not deploy in this test. The dummies were restrained with seatbelts.

The useable fuel tank capacity provided by the manufacturer to the Office of Vehicle Safety Compliance (32.5 gallons) did not agree with the fuel tank capacity provided in the owner's manual (31.0 gallons or 117.3 liters). Following instructions from the COTR, the owner's manual stated capacity of 117.3 liters was used in test weight calculations and was used in determining the amount of Stoddard to put into the fuel tank to test at the 94% full level. [TRC Inc. used the method of topping off the fuel (gasoline) for determining the fully loaded weight and then drained all the fuel and filled the fuel tank to 94 percent capacity with Stoddard solvent.]

The vehicle test weight was 15.0 kg above the maximum of the test weight corridor as shown in this report. The test weight had been recalculated on test day, with COTR approval, using Rated Cargo and Luggage Weight (RCLW) of 136 kg instead of the calculated RCLW of 100.5 kg. Thus the test weight was thought to be within the corridor on test day.

The left front and right rear vehicle pre-test attitudes did not fall between the measured attitudes for the delivered and fully loaded conditions. Deviation was 10 mm or less.

The deformable barrier face was attached to an offset rigid load cell barrier designed and owned by NHTSA's Vehicle Research and Test Center. The barrier face was mounted with the specified steel strips and 10 bolts as specified, although the 5 bolts on top and bottom were not evenly spaced.

The rear pit camera (fuel tank view) had no LFD's for determination of film speed.

## Section 5

### Test Data Sheets

# DATA SHEET 1

## COTR Vehicle Work Order

Vehicle model year, make, and model: 2003 Chevrolet Suburban

NHTSA No.: C30104 Test Date: 11/14/02

COTR signature: Charles R. Case

Tests to be performed for this vehicle are checked below.

- ☒ 1. Rear outboard seating position seat belts (S4.1.4.2(h) & (S4.2.4)
- ☒ 2. Air bag labels (S4.5.1)
- ☒ 3. Readiness indicator (S4.5.2)
- ☒ 4. Passenger air bag manual cut-off device (S4.5.4)
- ☒ 5. Lap belt lockability (S7.1.1.5)
- ☒ 6. Seat belt warning system (S7.3)
- ☒ 7. Seat belt contact force (S7.4.3)
- ☒ 8. Seat belt latch plate access (S7.4.4)
- ☒ 9. Seat belt retraction (S7.4.5)
- ☒ 10. Seat belt guides and hardware (S7.4.6)
- ☐ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart R) using the following indicated child restraints.

### Section A

☐ Cosco Dream Ride 02-719 ☐ Full rearward ☐ Mid position ☐ Full forward

### Section B

☐ Britax Handle with Care 191 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Assura 4553 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Avanti SE 41530 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Smart Fit 4543 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Ariva 02727 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Opus 35 02603 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Discovery Adjust Right 212 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo First Choice 204 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo On My Way Position Right V 282 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Graco Infant 8457 ☐ Full rearward ☐ Mid position ☐ Full forward

### Section C

☐ Britax Roundabout 161 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Encore 4612 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century STE 1000 4416 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Olympian 02803 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Touriva 02519 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Medallion 254 ☐ Full rearward ☐ Mid position ☐ Full forward

- ☐ 12. Suppression tests with 3 year-old dummy (Part 572, Subpart P) using the following indicated child restraints where a child restraint is required.

### Section C

☐ Britax Roundabout 161 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Encore 4612 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century STE 1000 4416 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Olympian 02803 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Touriva 02519 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Medallion 254 ☐ Full rearward ☐ Mid position ☐ Full forward

### Section D

☐ Britax Roadster 9004 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Next Step 4920 ☐ Full rearward ☐ Mid position ☐ Full forward

- ☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Mid position ☐ Full forward
13. Suppression tests with Representative 3-year-old child using the following indicated child restraints where a child restraint is required. (Laboratory Test Procedure Appendix H, Data Sheet 16H and 17H)  
 Section C  
☐ Britax Roundabout 161 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Century Encore 4612 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Century STE 1000 4416 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Cosco Olympian 02803 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Cosco Touriva 02519 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Evenflo Medallion 254 ☐ Full rearward ☐ Mid position ☐ Full forward  
 Section D  
☐ Britax Roadster 9004 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Century Next Step 4920 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Mid position ☐ Full forward
14. Suppression tests with 3-year-old dummy (Part 572, Subpart P) in the following positions  
☐ Sitting on seat with back against seat back (S22.2.2.1)  
☐ Sitting on seat with back against reclined seat back (S22.2.2.2)  
☐ Sitting on seat with back not against seat back (S22.2.2.3)  
☐ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)  
☐ Standing on seat, facing forward (S22.2.2.5)  
☐ Kneeling on seat facing forward (S22.2.2.6)  
☐ Kneeling on seat facing rearward (S22.2.2.7)  
☐ Lying on seat (S22.2.2.8)
15. Suppression tests with representative 3-year-old child in the following positions  
☐ Sitting on seat with back against seat back (S22.2.2.1)  
☐ Sitting on seat with back against reclined seat back (S22.2.2.2)  
☐ Sitting on seat with back not against seat back (S22.2.2.3)  
☐ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)  
☐ Standing on seat, facing forward (S22.2.2.5)  
☐ Kneeling on seat facing forward (S22.2.2.6)  
☐ Kneeling on seat facing rearward (S22.2.2.7)  
☐ Lying on seat (S22.2.2.8)
16. Suppression tests with 6-year-old dummy (Part 572, Subpart N) using the following indicated child restraints where a child restraint is required.  
 Section D  
☐ Britax Roadster 9004 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Century Next Step 4920 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Mid position ☐ Full forward
17. Suppression tests with representative 6-year-old child using the following indicated child restraints where a child restraint is required.  
 Section D  
☐ Britax Roadster 9004 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Century Next Step 4920 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Cosco High Back Booster 02-442 ☐ Full rearward ☐ Mid position ☐ Full forward  
☐ Evenflo Right Fit 245 ☐ Full rearward ☐ Mid position ☐ Full forward
18. Suppression tests with 6-year-old dummy (Part 572, Subpart N) in the following positions  
☐ Sitting on seat with back against seat back (S22.2.2.1)  
☐ Sitting on seat with back against reclined seat back (S22.2.2.2)  
☐ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)  
☐ Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

19. Suppression tests with representative 6-year-old child in the following positions
- \_\_\_ Sitting on seat with back against seat back (S22.2.2.1)
  - \_\_\_ Sitting on seat with back against reclined seat back (S22.2.2.2)
  - \_\_\_ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
  - \_\_\_ Sitting back in the seat and leaning on the right front passenger door (S24.3.3)
20. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints.
- Section B
- |  |                   |                  |                  |
|--|-------------------|------------------|------------------|
| ___ Britax Handle with Care 191            | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Assura 4553                    | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Avania SL 41530                | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Smart Fit 4543                 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Arriva 02727                     | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Optima 35 02603                  | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo Discovery Adjust Right 212     | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo First Choice 204               | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo On My Way Position Right V 282 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Graco Infant 8457                      | ___ Full rearward | ___ Mid position | ___ Full forward |
- Section C
- |                           |                   |                  |                  |
|---------------------------|-------------------|------------------|------------------|
| ___ Britax Roundabout 161 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Encore 4612   | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century STE 1000 4416 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Olympian 02803  | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Touriva 07519   | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo Horizon V 425 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo Medallion 254 | ___ Full rearward | ___ Mid position | ___ Full forward |
21. Test of Reactivation of the Passenger Air Bag System with an Unbelted 5th Percentile Female Dummy (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): \_\_\_\_\_
22. Test of Reactivation of the Passenger Air Bag System with a representative 5th Percentile Female (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): \_\_\_\_\_
23. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P) in the following positions
- \_\_\_ Position 1
  - \_\_\_ Position 2
24. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N) in the following positions
- \_\_\_ Position 1
  - \_\_\_ Position 2
25. Low risk deployment test with 5th female dummy (Part 572, Subpart O) in the following positions
- \_\_\_ Position 1
  - \_\_\_ Position 2
- X 26. Impact tests
- | Frontal Oblique  | Test Speed |
|--|------------|
| ___ Belted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.1(a))                    |            |
| ___ Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1))               |            |
| ___ Unbelted 50th male dummy driver and passenger ((32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b)) |            |
| Frontal 0°   | Test Speed |
| ___ Belted 50th male dummy driver ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))                  |            |
| ___ Belted 50th male dummy passenger ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))               |            |
| ___ Belted 5th female dummy driver ((0 to 48 km/h) (S16.1(a))                                  |            |
| ___ Belted 5th female dummy passenger ((0 to 48 km/h) (S16.1(a))                               |            |
| ___ Belted 50th male dummy driver and passenger ((0 to 56 km/h) (S5.1.1(b)(2))                 |            |
| ___ Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1))               |            |

- ☐ Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
  - ☐ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
  - ☐ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
  - ☐ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
  - ☒ 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- Test Speed 40 km/h see test procedure for speed tolerance
- ☐ 27. Sled test: Unbelted 50th male dummy driver and passenger (S13)
  - ☐ 28. FMVSS 204 indicant test
  - ☒ 29. FMVSS 212 test (indicant)
  - ☒ 30. FMVSS 219 indicant test
  - ☒ 31. FMVSS 301 frontal test (indicant)

## DATA SHEET 2

Page 1 of 2

## REPORT OF VEHICLE CONDITION

CONTRACT NO. DTNH22-D-08062 Date: 11/14/02  
 FROM: Transportation Research Center, Virginia L. Watters  
Lab & rep name  
 TO: Charles R. Case OVSC, NSA-31  
COTR Name  
 PURPOSE: ( ) Initial Receipt ( ) Received via Transfer (X) Present vehicle condition  
 MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV  
 MANUFACTURE DATE: 08/02 NHTSA NO.: C30104 BODY COLOR: Tan  
 VIN: 3GNEC16Z53G108730 GVWR 3175 GAWR (Fr) 1425 GAWR (Rr) 1814  
 ODOMETER READINGS: ARRIVAL 70 miles DATE: 11/12/02  
 COMPLETION 70 miles DATE: 11/14/02  
 PURCHASE PRICE: \$ N/A DEALER'S NAME: N/A

- A. All options listed on "window sticker" are present on the test vehicle.  
☒ Yes ☐ No
- B. Tires and wheel rims are new and the same as listed.  
☒ Yes ☐ No
- C. There are no dents or other interior or exterior flaws.  
☒ Yes ☐ No
- D. The vehicle has been properly prepared and is in running condition.  
☒ Yes ☐ No
- E. Keyless remote is available and working.  
☐ Yes ☒ No
- F. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.  
☐ Yes ☒ No
- G. Proper fuel filler cap is supplied on the test vehicle.  
☒ Yes ☐ No
- H. Using permanent marker, identify vehicle with NHTSA number and FMVSS test type(s) on roof line above driver door or for school buses, place a placard with NHTSA number inside the windshield and to the exterior front and rear side of bus.  
☒ Yes ☐ No
- I. Place vehicle in storage area.  
☒ Yes ☐ No
- J. Inspect the vehicle's interior and exterior, including all windows, seats, doors, etc., to confirm that each system is complete and functional per the manufacturer's specifications. Any damage, misadjustment, or other unusual condition that could influence the test program or test results shall be recorded. Report any abnormal condition to the NHTSA COTR before beginning any test.  
☐ Vehicle OK ☒ Conditions reported below in comment section

Identify the letter above to which any of the following comments apply.

Comments: Scratch on hood when received. No extra set of keys available.



DATA SHEET 2

Page 2 of 2

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

LIST OF FMVSS TESTS PERFORMED BY THIS LAB:

.208 plus indicant: 212, 219, 301

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV

NHTSA NO. C30104

REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Equipment that is no longer on the test vehicle as noted on previous page: None

Explanation for equipment removal: The owner's manual was removed to store with project file.

Test Vehicle Condition: In a frontal impact, the vehicle sustained significant front end and unknown structural damage.

RECORDED BY: Don Ledley

DATE: 11/22/02

APPROVED BY: Virginia Watters

DATE: 12/09/02

#####

RELEASE OF TEST VEHICLE

The vehicle described above is released from TRC Inc. to be delivered to \_\_\_\_\_  
(Laboratory) (Laboratory)

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Odometer: \_\_\_\_\_

Lab Representative: \_\_\_\_\_  
Signature Title

Carrier/Customer Representative: \_\_\_\_\_  
Signature Date

**DATA SHEET 3**  
Certification Label and Tire Placard Information

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): Don Ledley

1. Certification Label

Manufacturer General Motors Corporation

Date of Manufacture 08/02

VIN 3GNEC16Z53G108703

Vehicle certified as:      Passenger car   X   MPV      Truck      Bus

Front axle GVWR 1452 kg/3200 lbs.

Rear axle GVWR 1814 kg/4000 lbs.

Total GVWR 3175 kg/7000 lbs.

2. Tire Placard

     N/A – Vehicle is not a passenger car and does not have a tire placard.

  X   This is not a passenger car (see the item 1 above), but all or part of this information is still contained on a vehicle label and is reported here.

Vehicle Capacity Weight N/A<sup>1</sup>

Designated seating capacity front N/A<sup>1</sup>

Designated seating capacity rear N/A<sup>1</sup>

Total Designated seating capacity N/A<sup>1</sup>

Recommended cold tire inflation pressure front 240 kPa/35 psi

Recommended cold tire inflation pressure rear 240 kPa/35 psi

Recommended tire size P265/70R16

<sup>1</sup> Label did not contain this information.

**DATA SHEET 4**  
**REAR OUTBOARD SEATING POSITION SEAT BELTS**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): Don Ledley

Do all rear outboard seating positions have type 2 seat belts? Yes X; No       

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 seat belt was not installed.

REMARKS:

**DATA SHEET 5**  
**AIR BAG LABELS (S4.5.1)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

1. Air Bag Maintenance Label and Owner's Manual Instructions: (S4.5.1(a))
  - 1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?  
     Yes (Go to 1.2);   X   No (Go to 2)
  - 1.2 Does the vehicle have a label specifying air bag maintenance or replacement?  
     Yes-Pass;      **No-FAIL**
  - 1.3 Does the label contain one of the following?  
     Yes-Pass;      **No-FAIL**  
Check applicable schedule  
     Schedule on label specifies month and year (Record date           )  
     Schedule on label specifies vehicle mileage (Record mileage           )  
     Schedule on label specifies interval measured from date on certification label  
      (Record interval           )
  - 1.4 Is the label permanently affixed within the passenger compartment such that it cannot be removed without destroying or defacing the label or the survivor?  
     Yes-Pass;      **No-FAIL**
  - 1.5 Is the label lettered in English?  
     Yes-Pass;      **No-FAIL**
  - 1.6 Is the label in block capitals and numerals?  
     Yes-Pass;      **No-FAIL**
  - 1.7 Are the letters and numerals at least 3/32 inches high?  
     height of letters and numerals  
     Yes-Pass;      **No-FAIL**
  - 1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement?      Yes-Pass;      **No-FAIL**
2. Does the owner's manual: (S4.5.1(f))
  - 2.1 Include a description of the vehicle's air bag system in an easily understandable format?  
  X   Yes-Pass;      **No-FAIL**
  - 2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?  
  X   Yes-Pass;      **No-FAIL**
  - 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?  
  X   Yes-Pass;      **No-FAIL**
  - 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?  
  X   Yes-Pass;      **No-FAIL**
  - 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to ensure maximum safety protection for those occupants?  
  X   Yes-Pass;      **No-FAIL**
  - 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?  
  X   Yes-Pass;      **No-FAIL**

- 2.7 Is the vehicle certified to meet the requirements of S14.5, S15, S17, S19, S21, S23, and S25? (Obtain the answer to this question from the COTR.) (S4.5.1(f)(2))  
☒ Yes (go to 2.7.1); ☐ No (go to 3)
- 2.7.1 Explain the proper functioning of the advanced air bag system? (S4.5.1(f)(2))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.2 Provide a summary of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.3 Present and explain the main components of the advanced passenger air bag system? (S4.5.1(f)(2)(i))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.4 Explain how the components function together as part of the advanced passenger air bag system? (S4.5.1(f)(2)(ii))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.5 Contain the basic requirements for proper operation, including an explanation of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2)(iii))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2?  
☒ Yes, continue with 2.7.6  
☐ No, go to 2.7.7
- 2.7.6.1 Contain a complete description of the passenger air bag suppression system installed in the vehicle, including a discussion of any suppression zone? (S4.5.1(f)(2)(iv))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.6.2 Discuss the telltale light, specifying its location in the vehicle and explaining when the light is illuminated?  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.7 Explain the interaction of the advanced passenger air bag system with other vehicle components, such as seat belts, seats or other components? (S4.5.1(f)(2)(v))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.8 Summarize the expected outcomes when child restraint systems, children and small teenagers or adults are both properly and improperly positioned in the passenger seat, including cautionary advice against improper placement of child restraint systems? (S4.5.1(f)(2)(vi))  
☒ Yes-Pass; ☐ No-FAIL
- 2.7.9 Provide information on how to contact the vehicle manufacturer concerning modifications for persons with disabilities that may affect the advanced air bag system? (S4.5.1(f)(2)(vii))  
☒ Yes-Pass; ☐ No-FAIL
3. Sun Visor Air Bag Warning Label (S4.5.1 (b))
- 3.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(b)(2))  
☒ Yes (go to 3.1.1 and skip 3.2; ☐ No (go to 3.2, skipping 3.1.1 through 3.1.6)
- 3.1.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (b)(2))  
 Driver side ☒ Yes-Pass ☐ No-FAIL  
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in Figure 8 at each front outboard seating position? (S4.5.1(b)(2))  
 Driver side ☒ Yes-Pass ☐ No-FAIL  
 Passenger side ☒ Yes-Pass ☐ No-FAIL

- 3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(2)(i))  
 Driver side   X   Yes-Pass        **No-FAIL**  
 Passenger side   X   Yes-Pass        **No-FAIL**
- 3.1.4 Is the message area white with black text? (S4.5.1(b)(2)(ii))  
 Driver side   X   Yes-Pass        **No-FAIL**  
 Passenger side   X   Yes-Pass        **No-FAIL**
- 3.1.5 Is the message area at least 30 cm<sup>2</sup>? (S4.5.1(b)(2)(ii))  
 Driver side: Length 12.5 cm , Width 7.8 cm  
 Passenger side: Length 12.5 cm , Width 7.8 cm  
 Driver actual message area 97.5 cm<sup>2</sup>  
 Passenger actual message area 97.5 cm<sup>2</sup>  
 Driver side   X   Yes-Pass        **No-FAIL**  
 Passenger side   X   Yes-Pass        **No-FAIL**
- 3.1.6 Is the pictogram black on a white background? (S4.5.1(b)(2)(iii))  
 Driver side   X   Yes-Pass        **No-FAIL**  
 Passenger side   X   Yes-Pass        **No-FAIL**
- 3.1.7 Is the pictogram at least 30 mm (1.2 in) in length? (S4.5.1(b)(2)(iii))  
 Driver side: Length 32 mm  
 Passenger side: Length 32 mm  
 Driver side   X   Yes-Pass        **No-FAIL**  
 Passenger side   X   Yes-Pass        **No-FAIL**
- 3.2 Vehicles not certified to meet the requirements of S19, S21, and S23.
- 3.2.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing it? (S4.5.1 (b)(1))  
 Driver side        Yes-Pass        **No-FAIL**  
 Passenger side        Yes-Pass        **No-FAIL**
- 3.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position? (S4.5.1 (b)(1))  
 Driver side        Yes-Pass        **No-FAIL**  
 Passenger side        Yes-Pass        **No-FAIL**
- 3.2.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(1)(i))  
 Driver side        Yes-Pass        **No-FAIL**  
 Passenger side        Yes-Pass        **No-FAIL**
- 3.2.4 Is the message area white with black text? (S4.5.1 (b)(1)(ii))  
 Driver side        Yes-Pass        **No-FAIL**  
 Passenger side        Yes-Pass        **No-FAIL**
- 3.2.5 Is the message area at least 30 cm<sup>2</sup>? (S4.5.1 (b)(1)(ii))  
 Driver side: Length        , Width         
 Passenger side: Length        , Width         
 Actual message area        cm<sup>2</sup>  
 Driver side        Yes-Pass        **No-FAIL**  
 Passenger side        Yes-Pass        **No-FAIL**
- 3.2.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii))  
 Driver side        Yes-Pass        **No-FAIL**  
 Passenger side        Yes-Pass        **No-FAIL**

- 3.2.7 Is the pictogram at least 30 mm in diameter? (S4.5.1 (b)(2)(iii))  
 Actual diameter \_\_\_\_\_ mm  
 Driver side Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side Yes-Pass \_\_\_\_\_ No-FAIL
- 3.3 Is the same side of the sun visor that contains the air bag warning label free of other information with the exception of the air bag maintenance label and/or the rollover-warning label? (S4.5.1 (b)(3))  
 Driver side ☒ Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side ☒ Yes-Pass \_\_\_\_\_ No-FAIL
- 3.4 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label and/or the rollover-warning label? (S4.5.1 (b)(3))  
 Driver side ☒ Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side ☒ Yes-Pass \_\_\_\_\_ No-FAIL
- 3.5 Does the driver side visor contain a rollover-warning label on the same side of the visor as the air bag warning label?  
 \_\_\_\_\_ Yes (go to 3.5.1); ☒ No (go to 4.1, skipping 3.5.1 through 3.5.)
- 3.5.1 Are both the rollover-warning label and the air bag warning label surrounded by a continuous solid-lined border?  
 \_\_\_\_\_ Yes (go to 3.5.2 and skip 3.5.3); \_\_\_\_\_ No (go to 3.5.3 and skip 3.5.2.)
- 3.5.2 Is the shortest distance from the border of the rollover label to the border of the air bag warning label at least 1 cm? (575.105 (d)(1)(iv)(B))  
 \_\_\_\_\_ actual distance  
 \_\_\_\_\_ Yes-Pass; \_\_\_\_\_ No-FAIL
- 3.5.3 Is the shortest distance from any of the lettering or graphics on the rollover-warning label to any of the lettering or graphics of the air bag warning label at least 3 cm? (575.105 (d)(1)(iv)(A)) \_\_\_\_\_ actual distance  
 \_\_\_\_\_ Yes-Pass; \_\_\_\_\_ No-FAIL
4. Air Bag Alert Label (A "Rollover Warning Label" or "Rollover Alert Label" may be on the same side of the driver's sun visor as the "Air Bag Alert Label." 575.105(d))
- 4.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?  
 Driver side ☒ Yes \_\_\_\_\_ No If yes, for driver and passenger go to 5.  
 Passenger side \_\_\_\_\_ No air bag ☒ Yes \_\_\_\_\_ No
- 4.2 Is the air bag alert label permanently affixed (including permanent marking on the visor material or molding into the visor material) to the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (c))  
 Driver side \_\_\_\_\_ Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side \_\_\_\_\_ Yes-Pass \_\_\_\_\_ No-FAIL
- 4.3 Is the air bag alert label visible when the visor is in the stowed position? (S4.5.1(c))  
 Driver side Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side Yes-Pass \_\_\_\_\_ No-FAIL
- 4.4 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c))  
 Driver side \_\_\_\_\_ Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side \_\_\_\_\_ Yes-Pass \_\_\_\_\_ No-FAIL
- 4.5 Is the message area black with yellow text? (S4.5.1(c)(1))  
 Driver side Yes-Pass \_\_\_\_\_ No-FAIL  
 Passenger side Yes-Pass \_\_\_\_\_ No-FAIL

- 4.6 Is the message area at least 20 cm<sup>2</sup>? (S4.5.1(c)(1))  
 Driver side: Length \_\_\_\_\_, Width \_\_\_\_\_  
 Passenger side: Length \_\_\_\_\_, Width \_\_\_\_\_  
 Actual message area \_\_\_\_\_ cm<sup>2</sup>  
 Driver side \_\_\_\_ Yes-Pass \_\_\_\_ No-FAIL  
 Passenger side \_\_\_\_ Yes-Pass \_\_\_\_ No-FAIL
- 4.7 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2))  
 Driver side \_\_\_\_ Yes-Pass \_\_\_\_ No-FAIL  
 Passenger side \_\_\_\_ Yes-Pass \_\_\_\_ No-FAIL
- 4.8 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2))  
 Driver side: diameter \_\_\_\_\_ mm  
 Passenger side: diameter \_\_\_\_\_ mm  
 Driver side \_\_\_\_ Yes-Pass \_\_\_\_ No-FAIL  
 Passenger side \_\_\_\_ Yes-Pass \_\_\_\_ No-FAIL
5. Label On the Dashboard
- 5.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(e)(2))  
X Yes (go to 5.1.1 and skip 5.2 through 5.2.5)  
 \_\_\_\_ No (go to 5.2, skipping 5.1.1 through 5.1.6)
- 5.1.1 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(2))  
X Yes-Pass; \_\_\_\_ No-FAIL
- 5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(c)(2))  
X Yes-Pass; \_\_\_\_ No-FAIL
- 5.1.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children." (S4.5.1(e)(2)(iii))) to the label shown in Figure 9? (S4.5.1(e)(2))  
X Yes-Pass; \_\_\_\_ No-FAIL
- 5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i))  
X Yes-Pass; \_\_\_\_ No-FAIL
- 5.1.5 Is the message white with black text? (S4.5.1(e)(2)(ii))  
X Yes-Pass; \_\_\_\_ No-FAIL
- 5.1.6 Is the message area at least 30 cm<sup>2</sup>? (S4.5.1(e)(2)(ii))  
 Length 105 mm, Width 50 mm  
 Actual message area 52.5 cm<sup>2</sup>  
X Yes-Pass; \_\_\_\_ No-FAIL
- 5.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(1))  
 \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- 5.2.1 Is the label clearly visible from all front seating positions? (S4.5.1(c)(1))  
 \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- 5.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." to the label shown in Figure 7? (S4.5.1(c)(1)(iii))  
 \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- 5.2.3 Is the heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1(e)(1)(i))  
 \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- 5.2.4 Is the message white with black text? (S4.5.1(e)(1)(ii))  
 \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- 5.2.5 Is the message area at least 30 cm<sup>2</sup>? (S4.5.1(e)(1)(ii))  
 Length \_\_\_\_\_, Width \_\_\_\_\_  
 Actual message area \_\_\_\_\_ cm<sup>2</sup>  
 \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL



Label Outline: Vertical and Horizontal Line Black



Figure 6a. Sun Visor Label Visible When Visor is in Down Position.

Label Outline: Vertical and Horizontal Line Black



Figure 6b. Sun Visor Label Visible When Visor is in Down Position.

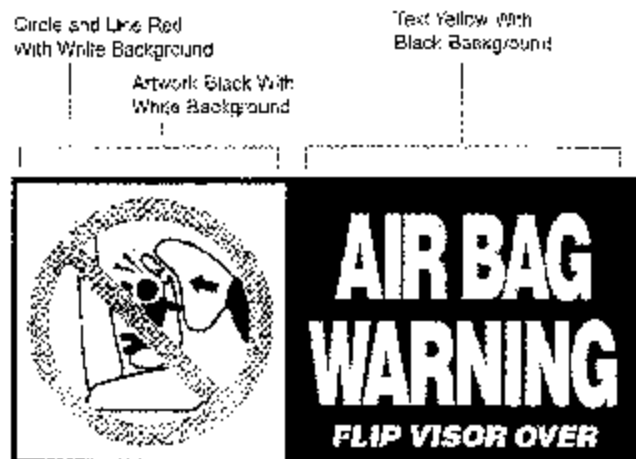


Figure 6c. Sun Visor Label Visible When Visor is in Up Position.

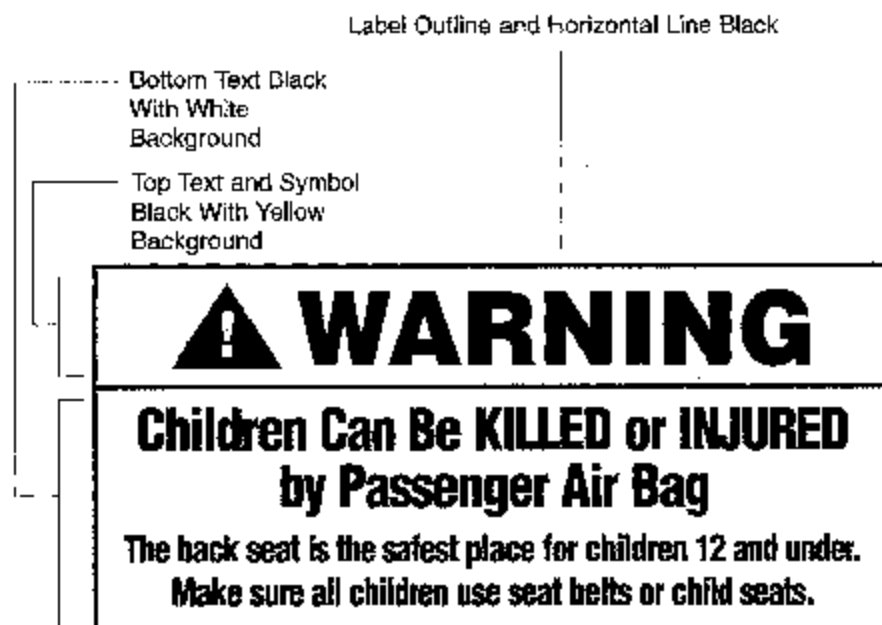


Figure 7. Removable Label on Dash.

Label Outline, Vertical and Horizontal Lines Black

Bottom Text and Artwork Black with  
White Background

Top Text Black with  
Yellow Background

# **! WARNING**

## **EVEN WITH ADVANCED AIR BAGS**



- Children can be killed or seriously injured by the air bag
- The back seat is the safest place for children
- Always use seat belts and child restraints
- See owner's manual for more information about air bags

Figure 8. Sun Visor Label Visible when Visor  
is in Down Position.

Label Outline, Vertical and Horizontal Lines Black

Bottom Text Black with  
White Background

Top Text Black with  
Yellow Background

# **This Vehicle is Equipped with Advanced Air Bags**

## **Even with Advanced Air Bags**

Children can be killed or seriously injured by the air bag.

The back seat is the safest place for children.

Always use seat belts and child restraints.

See owner's manual for more information about air bags.

**Figure 9.** Removable Label on Dash.

**DATA SHEET 6**  
**FMVSS 208 READINESS INDICATOR (S4.5.2)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation to Lawrence F. Henneberger on behalf of Breed)

X 1. Is the system totally mechanical? Yes     ; No X  
(If YES this Data Sheet is complete.)

X 2. Describe the location of the readiness indicator: Left side of instrument cluster

X 3. Is the readiness indicator clearly visible to the driver?

X Yes-Pass;      No-FAIL

X 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided on a label or in the owner's manual?

X Yes-Pass;      No-FAIL

X 5. Does the vehicle have an on-off switch for the passenger air bag?

X Yes (go to 6)      No (this form is complete)

X 6. Is the air bag readiness indicator off when the passenger air bag switch is in the off position?

X Yes-Pass;      No-FAIL

REMARKS:

**DATA SHEET 7**  
**Passenger Air Bag Manual Cut-Off Device (S4.5.4)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

- ☒ 1. Is the vehicle equipped with an on-off switch that deactivates the air bag installed at the right front outboard seating position?  
\_\_\_\_ Yes, go to 2  
☒ No, this sheet is complete
- \_\_\_\_ 2. Does the vehicle have any forward-facing rear designated seating positions? (S4.5.4(a))  
\_\_\_\_ Yes, go to 3  
\_\_\_\_ No, go to 4
- \_\_\_\_ 3. Verification of the lack of room for a child restraint in the rear seat behind the driver's seat. (S4.5.4(b))
- \_\_\_\_ 3.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
\_\_\_\_ N/A - No lumbar adjustment
- \_\_\_\_ 3.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
\_\_\_\_ N/A - No additional support adjustment
- \_\_\_\_ 3.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
\_\_\_\_ N/A - No independent fore-aft seat cushion adjustment
- \_\_\_\_ 3.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
\_\_\_\_ N/A - No independent seat cushion height adjustment.
- \_\_\_\_ 3.5. Put the seat in its full rearward position. (S16.2.10.3.1)  
\_\_\_\_ N/A - the seat does not have a fore-aft adjustment
- \_\_\_\_ 3.6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
\_\_\_\_ N/A - No seat height adjustment
- 3.7 Draw a horizontal reference line on the side of the seat cushion.
- 3.8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
\_\_\_\_ N/A - The seat does not have a fore-aft adjustment.
- 3.9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position. (S8.1.2)  
\_\_\_\_ N/A - The seat does not have fore-aft adjustment.  
\_\_\_\_ Mid position  
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: \_\_\_\_\_
- 3.10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.  
\_\_\_\_ N/A - No adjustments

- Angle of reference line as tested \_\_\_\_\_
- \_\_\_\_ 3.11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- \_\_\_\_ N/A – No seat back angle adjustment
- Manufacturer's design seat back angle \_\_\_\_\_
- Tested seat back angle \_\_\_\_\_
- \_\_\_\_ 3.12 Is the driver seat a bucket seat?
- \_\_\_\_ Yes, go to 3.12.1 and skip 3.12.2.
- \_\_\_\_ No, go to 3.12.2 and skip 3.12.1.
- \_\_\_\_ 3.12.1 Bucket seats:
- \_\_\_\_ 3.12.1.1 Locate and mark a vertical Plane B through the longitudinal centerline of the seat driver's seat cushion. (S22.2.1.5) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
- Record the width of the seat. \_\_\_\_\_
- Record the distance from the edge of the seat to Plane B. \_\_\_\_\_
- \_\_\_\_ 3.12.1.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion behind the driver's seat. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the driver's seat.
- \_\_\_\_ mm distance
- \_\_\_\_ less than 720 mm – Pass
- \_\_\_\_ more than 720 mm – FAIL
- Go to 4
- \_\_\_\_ 3.12.2 Bench seats (including split bench seats):
- \_\_\_\_ 3.12.2.1 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
- \_\_\_\_ 3.12.2.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the front seat.
- \_\_\_\_ mm distance
- \_\_\_\_ less than 720 mm – Pass
- \_\_\_\_ more than 720 mm – FAIL
- Go to 4
4. Does the device turn the air bag on and off using the vehicle's ignition key? (S4.5.4.2)
- \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 5. Is the on-off device separate from the ignition switch? (S4.5.4.2)
- \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 6. Is there a telltale light that comes on when the passenger air bag is turned off? (S4.5.4.2)
- \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 7. Telltale light (S4.5.4.3)
- \_\_\_\_ 7.1 Is the light yellow? S4.5.4.3(a)
- \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- 7.2 Are the words "PASSENGER AIR BAG OFF" (S4.5.4.3(b))
- \_\_\_\_ 7.2.1 on the telltale?
- \_\_\_\_ Yes – Pass, go to 7.3
- \_\_\_\_ No go to 7.2.2
- \_\_\_\_ 7.2.2 within 25 mm of the telltale? \_\_\_\_\_ mm from the edge of the telltale light
- \_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL

- \_\_\_ 7.3 Does the telltale remain illuminated while the air bag is turned off? (S4.5.4.3(c)) (Leave the air bag off for 5 minutes.)  
     \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 7.4 Is the telltale illuminated while the air bag is turned on? (S4.5.4.3(d))  
     \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 7.5 Is the telltale combined with the air bag readiness indicator? (S4.5.3(e))  
     \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
8. Owner's manual
- \_\_\_ 8.1 Does the owner's manual contain complete instructions on the operation of the on-off switch? (S4.5.4.4(a))  
     \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 8.2 Does the owner's manual contain a statement that the on-off switch should only be used when a member of one of the following risk groups is occupying the right front passenger seating position? (S4.5.4.4(b))
- Infants:                      there is no back seat  
                                     the rear seat is too small to accommodate a child restraint  
                                     there is a medical condition that must be monitored constantly
- Children aged 1 to 12: there is no back seat  
                                     space is not always available in the rear seat  
                                     there is a medical condition that must be monitored constantly
- Medical condition:      medical risk causes special risk for passenger  
                                     greater risk for harm than with the air bag on
- \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 8.3 Does the owner's manual contain a warning about the safety consequences of using the on-off switch at other times?  
     \_\_\_ Yes-Pass;      \_\_\_ No-FAIL



**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center; Third Row Center

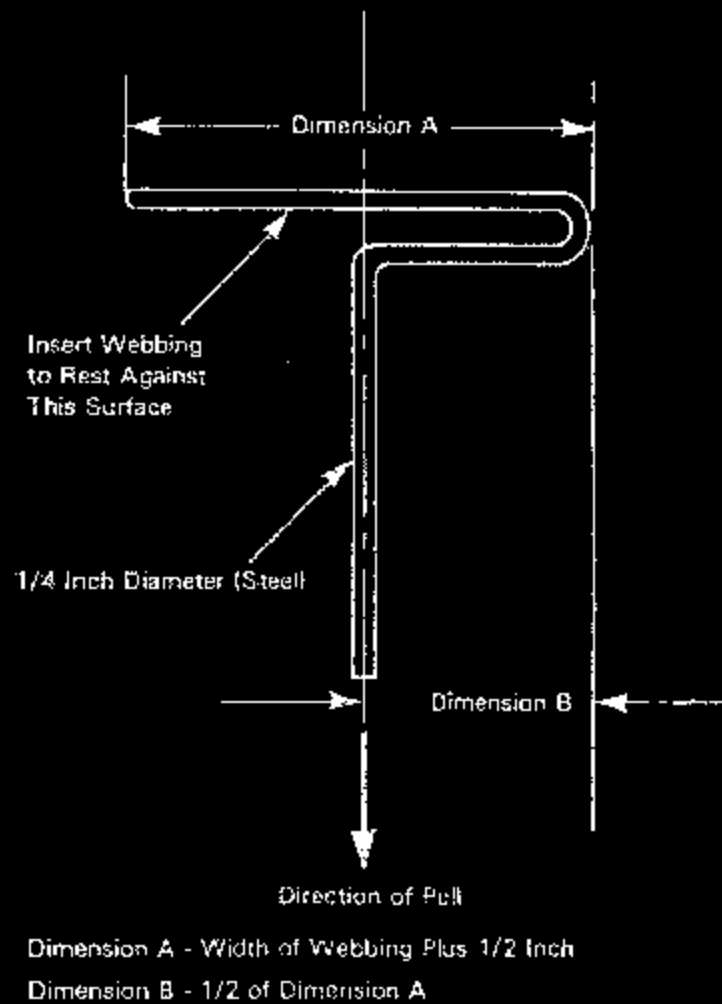
☒ N/A -- No retractor is at this position

☐ N/A -- The retractor is an automatic locking retractor ONLY

- ☐ 1. Record test fore-aft seat position, \_\_\_\_\_ (S7.1.1.5 (c)(1))  
(Any position is acceptable.)
- ☐ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))  
☐ Yes-Pass; ☐ No-FAIL.
- ☐ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))  
☐ Yes-Pass; ☐ No-FAIL.
- ☐ 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☐ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- ☐ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☐ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?  
☐ Yes; ☐ No (If yes, go to 7.1. If no, go to 8.)
- ☐ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))  
☐ Yes-Pass; ☐ No-FAIL.
- ☐ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- ☐ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))  
Measured distance between A and B \_\_\_\_\_ inches
- ☐ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- \_\_\_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle \_\_\_\_\_ (spec. 5 - 15 degrees)
- \_\_\_ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B \_\_\_\_\_ inches
- \_\_\_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate \_\_\_\_\_ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B \_\_\_\_\_ inches (S7.1.1.5(c)(6))
- \_\_\_ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= \_\_\_\_\_ inches;  
\_\_\_ Yes-Pass; \_\_\_ No-FAIL
- \_\_\_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= \_\_\_\_\_ inches;  
\_\_\_ Yes-Pass; \_\_\_ No-FAIL

REMARKS:



**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

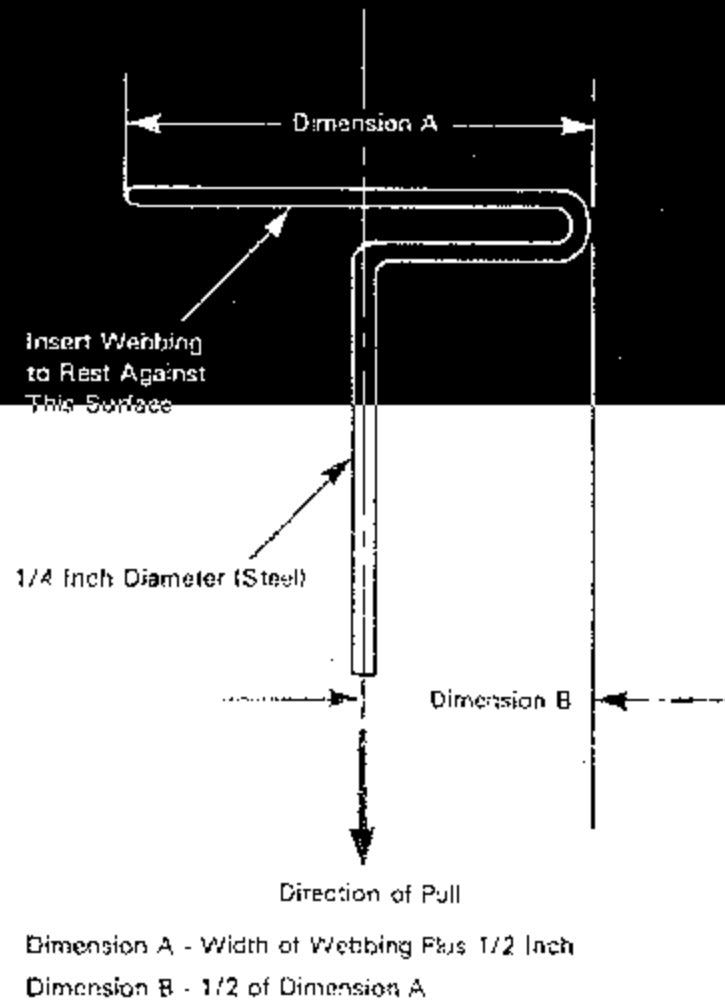
     N/A – No retractor is at this position

     N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Mid (S7.1.1.5 (c)(1))  
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))  
X Yes-Pass;      No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))  
X Yes-Pass;      No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?  
X Yes;      No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))  
X Yes-Pass;      No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))  
Measured distance between A and B 48.5 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B 12.4 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B 12.9 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7))  $13-12=$  5 inches;  
X Yes-Pass;      No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8))  $9-13=$  35.6 inches;  
X Yes-Pass;      No-FAIL

REMARKS:



**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

     N/A – No retractor is at this position

     N/A – The retractor is an automatic locking retractor ONLY

X 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))  
(Any position is acceptable.)

X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))

X Yes-Pass;      No-FAIL

X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))

X Yes-Pass;      No-FAIL

X 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

X Yes;      No (If yes, go to 7.1. If no, go to 8.)

X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))

X Yes-Pass;      No-FAIL

X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

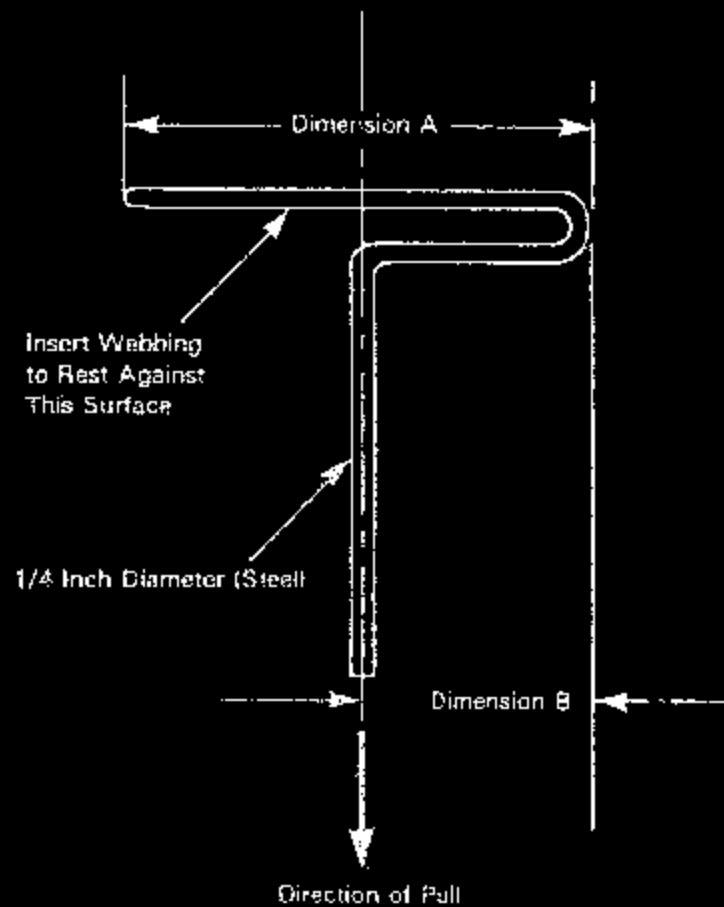
Measured distance between A and B 49.8 inches

X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B 27.5 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B 27.8 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7))  $13-12=$  0.3 inches;  
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8))  $9-13=$  22.0 inches;  
X Yes-Pass; No-FAIL

REMARKS:





Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

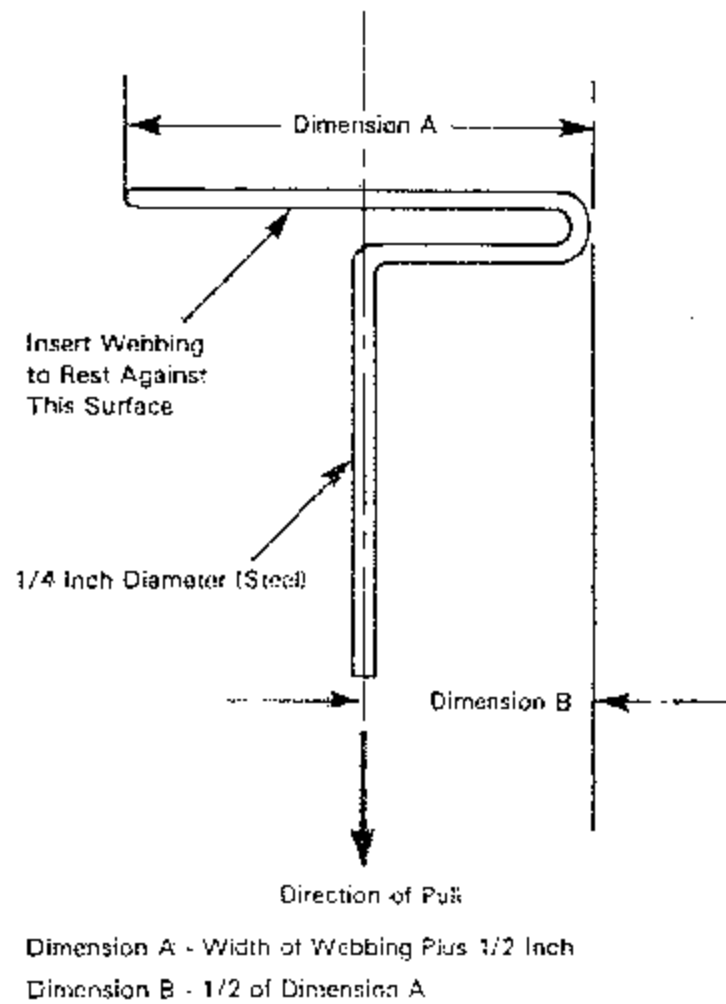
☐ N/A - No retractor is at this position

☐ N/A - The retractor is an automatic locking retractor ONLY.

- ☒ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))  
(Any position is acceptable.)
- ☒ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?  
☒ Yes; ☐ No (If yes, go to 7.1. If no, go to 8.)
- ☒ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- ☒ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))  
Measured distance between A and B 45.4 inches
- ☒ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B 28.5 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B 28.6 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 12 from the measurement in 13. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.1 inches;  
X Yes-Pass;      No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 16.8 inches;  
X Yes-Pass;      No-FAIL

REMARKS:



**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

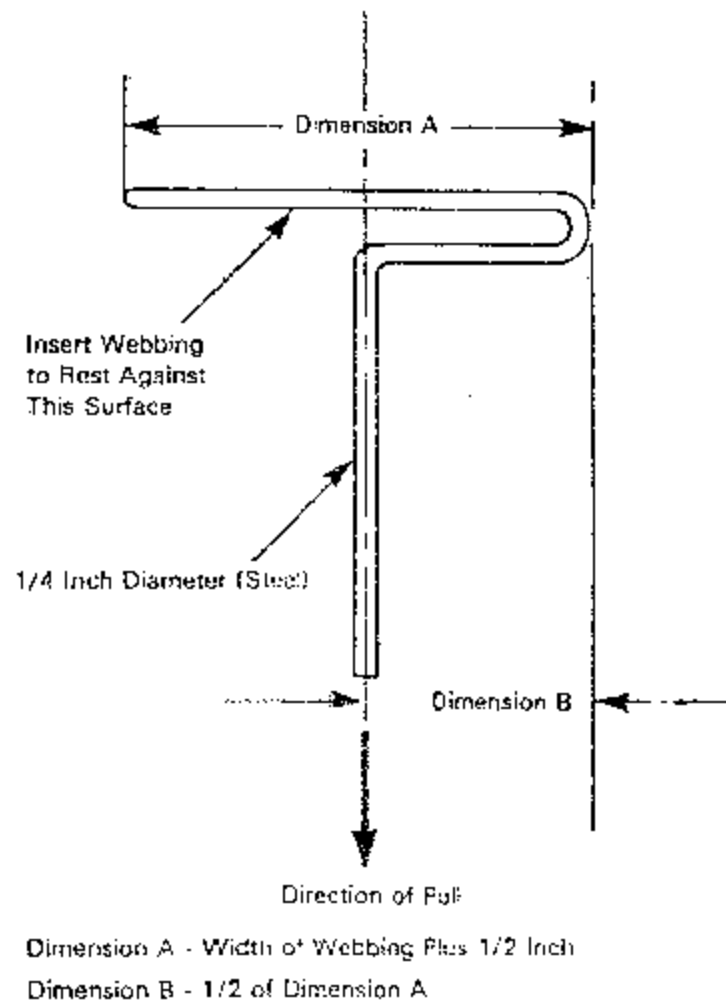
DESIGNATED SEATING POSITION: Second Row Right

- N/A – No retractor is at this position  
     N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Fixed \_\_\_\_\_ (S7.1.1.5 (c)(1))  
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))  
X Yes-Pass;      No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))  
X Yes-Pass;      No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?  
X Yes;      No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))  
X Yes-Pass;      No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))  
Measured distance between A and B 50.0 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B 27.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B 27.2 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7))  $13-12=$  0.2 inches;  
X Yes-Pass;      No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8))  $9-13=$  22.8 inches;  
X Yes-Pass;      No-FAIL

REMARKS:



**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Left

       N/A – No retractor is at this position

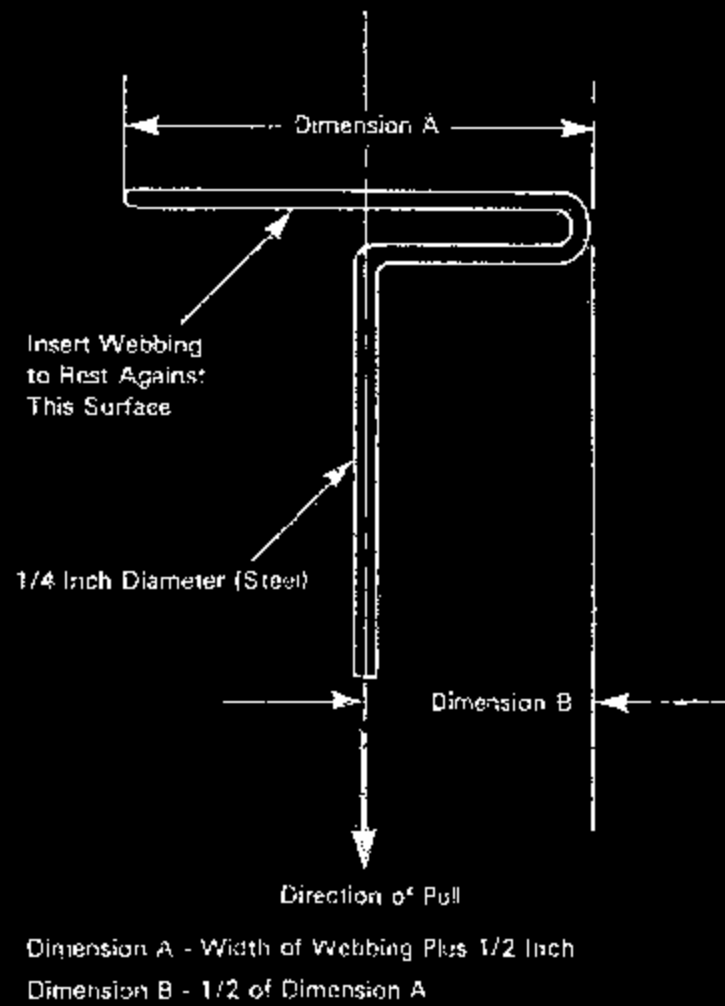
       N/A – The retractor is an automatic locking retractor ONLY

- X   1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))  
(Any position is acceptable.)
- X   2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))  
  X   Yes-Pass; **No-FAIL**
- X   3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))  
  X   Yes-Pass; **No-FAIL**
- X   4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X   5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X   6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X   7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?  
  X   Yes;        No (If yes, go to 7.1. If no, go to 8.)
- X   7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))  
  X   Yes-Pass; **No-FAIL**
- X   8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X   9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))  
Measured distance between A and B 44.0 inches
- X   10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))



- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B 15.5 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B 16.0 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.5 inches;  
X Yes-Pass;      No-FAIL.
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 28.0 inches;  
X Yes-Pass;      No-FAIL

REMARKS:



**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 8**  
**LAP BELT LOCKABILITY**

Passenger cars, trucks, buses, and multipurpose passenger  
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

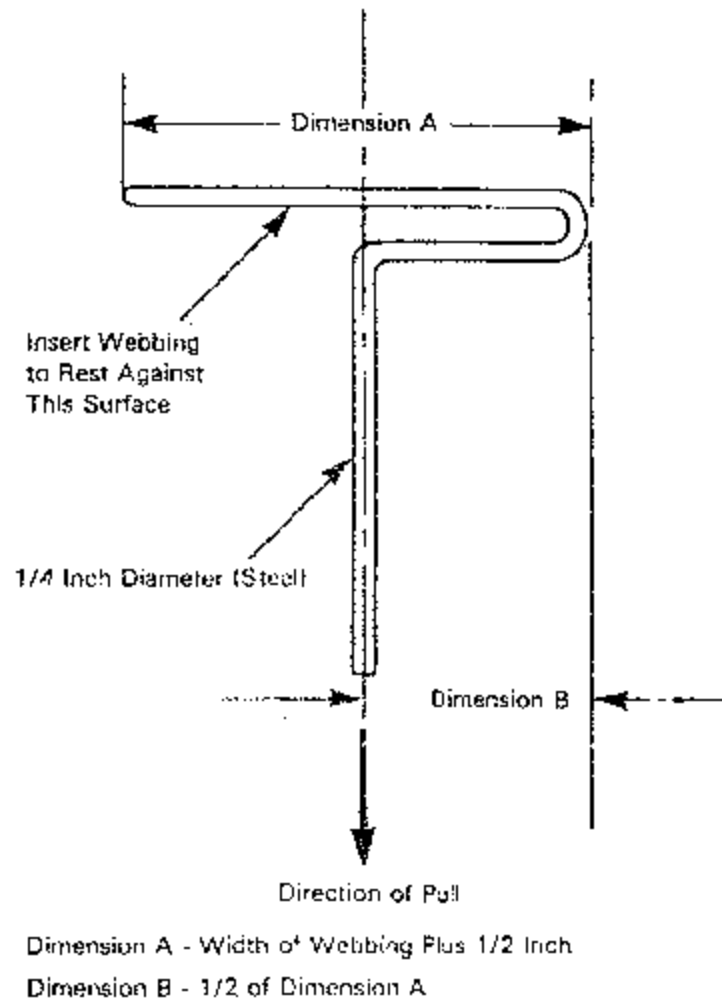
DESIGNATED SEATING POSITION: Third Row Right

- ☐ N/A – No retractor is at this position  
☐ N/A – The retractor is an automatic locking retractor ONLY

- ☒ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))  
(Any position is acceptable.)
- ☒ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?  
☒ Yes; ☐ No (If yes, go to 7.1. If no, go to 8.)
- ☒ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- ☒ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))  
Measured distance between A and B 44.2 inches
- ☒ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))  
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))  
Measured distance between A and B 15.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))  
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))  
Measured distance between A and B 15.5 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.5 inches;  
X Yes Pass;      No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 28.7 inches;  
X Yes-Pass;      No-FAIL

REMARKS:



**Figure 5. - Webbing Tension Pull Device**

**DATA SHEET 9**  
**FMVSS 208 SEAT BELT WARNING SYSTEM CHECK (S7.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

- ☒ 1. The occupant is in the driver's seat.  
☒ 2. The seat belt is in the stowed position.  
☒ 3. The key is in the "on" or "start" position.  
☒ 4. The time duration of the audible signal beginning with key "on" or "start" is 5 seconds.  
☒ 5. The occupant is in the driver's seat.  
☒ 6. The seat belt is in the stowed position.  
☒ 7. The key is in the "on" or "start" position.  
☒ 8. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.  
☒ 9. The occupant is in the driver's seat.  
☒ 10. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.  
☒ 11. The key is in the "on" or "start" position.  
☒ 12. The time duration of the audible signal beginning with key "on" or "start" is 0 seconds.  
☒ 13. The occupant is in the driver's seat.  
☒ 14. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.  
☒ 15. The key is in the "on" or "start" position.  
☒ 16. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.  
☒ 17. Complete the following table with the data from 4, 8, 12 and 16 to determine which option is used

		Warning light	Warning light specification	Audible signal	Audible signal specification*
S7.3 (a)(1)	Belt latched & Key on or start	Item 16 <u>7</u>	0 seconds*	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>7</u>	60 seconds minimum	Item 4 <u>5</u>	4 to 8 seconds
S7.3 (a)(2)	Belt latched & Key on or start	Item 16 <u>7</u>	4 to 8 seconds	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>7</u>	4 to 8 seconds	Item 4 <u>5</u>	4 to 8 seconds

\* 49 USCS @ 30124 does NOT allow an audible signal to operate for more than 8 seconds.

\*\* 0 seconds means the light or audible signal are NOT permitted to operate under these conditions.  
 See 7/12/00 interpretation to Patrick Raher of Hogan and Hartson

- ☒ 18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)
- ☐ S7.3 (a)(1)
  - ☒ S7.3 (a)(2)
  - ☐ **FAIL** - Does NOT meet the requirements of either option
- ☒ 19. Note wording of visual warning: (S7.3(a)(1) and S7.3(a)(2))
- ☐ Fasten Seat Belts
  - ☐ Fasten Belts
  - ☒ Symbol 101
  - ☐ **FAIL** - Does not use any of the above wording or symbol

## BELT CONTACT FORCE (S7.4.3)

NHUSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Left

Test all Type 2 seat belts **other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars.** Complete a form for each applicable seat belt.

- X   1. Does the vehicle incorporate a webbing tension-relieving device?  
       \_\_\_ Yes (this form is complete)  
         X   No (continue with this check sheet)
- X   2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
         X   N/A - No lumbar adjustment
- X   3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
         X   N/A - No additional support adjustment
- X   4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
       \_\_\_ N/A - No independent fore-aft seat cushion adjustment
- X   5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
         X   N/A - No independent seat cushion height adjustment.
- X   6. Put the seat in its full rearward position. (S16.2.10.3.1)  
       \_\_\_ N/A - the seat does not have a fore-aft adjustment
- X   7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
       \_\_\_ N/A - No seat height adjustment
- X   8 Draw a horizontal reference line on the side of the seat cushion.
- X   9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
       \_\_\_ N/A - The seat does not have a fore-aft adjustment.
- X   10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
         X   Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Center of 8 1/4 inch travel  
       length \_\_\_\_\_
- X   11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
       \_\_\_ N/A - No adjustments  
       Reference line angle as tested \_\_\_\_\_ 0°



- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)  
    \_\_\_ N/A - No adjustments  
    Manufacturer's design seat back angle 15.5°  
    Tested seat back angle 15.5°
- ☒ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 14. Fasten the seat belt latch.
- ☒ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.  
    Contact force 0.65 lb.  
    ☒ 0.0 to 0.7 pounds - Pass  
    \_\_\_ greater than 0.7 pounds - FAIL

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?  
    ☐ Yes (this form is complete)  
    ☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
    ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
    ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
    ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
    ☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
    ☐ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
    ☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
    ☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
    ☒ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Middle notch (12<sup>th</sup> of 23 notches)
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
    ☒ N/A - No adjustments  
    Reference line angle as tested 0°

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- \_\_\_ N/A - No adjustments
- Manufacturer's design seat back angle   15.5°
- Tested seat back angle                   15.5°
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force 0.60 lb.
- X 0.0 to 0.7 pounds - Pass
- greater than 0.7 pounds - FAIL**

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center & Third Row Center are not Type 2

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☐ 1. Does the vehicle incorporate a webbing tension-relieving device?  
☐ Yes (this form is complete)  
☐ No (continue with this check sheet)
- ☐ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
☐ N/A - No lumbar adjustment
- ☐ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
☐ N/A - No additional support adjustment
- ☐ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
☐ N/A - No independent fore-aft seat cushion adjustment
- ☐ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
☐ N/A - No independent seat cushion height adjustment
- ☐ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
☐ N/A - the seat does not have a fore-aft adjustment
- ☐ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
☐ N/A - No seat height adjustment
- ☐ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☐ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
☐ N/A - The seat does not have a fore-aft adjustment.
- ☐ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
☐ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: \_\_\_\_\_
- ☐ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
☐ N/A - No adjustments  
Reference line angle as tested \_\_\_\_\_

- \_\_\_ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- \_\_\_ N/A No adjustments
- Manufacturer's design seat back angle \_\_\_\_\_
- Tested seat back angle \_\_\_\_\_
- \_\_\_ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- \_\_\_ 14. Fasten the seat belt latch.
- \_\_\_ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- \_\_\_ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force \_\_\_\_\_ lb.
- \_\_\_ 0.0 to 0.7 pounds - Pass
- \_\_\_ greater than 0.7 pounds - FAIL

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?  
..... Yes (this form is complete)  
☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
..... Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
☒ N/A - No adjustments  
Reference line angle as tested: .....

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)  
X N/A – No adjustments  
Manufacturer's design seat back angle \_\_\_\_\_  
Tested seat back angle \_\_\_\_\_
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.  
Contact force 0.60 lb.  
X 0.0 to 0.7 pounds - Pass  
\_\_\_\_ greater than 0.7 pounds - FAIL

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?  
☐ Yes (this form is complete)  
☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
☒ N/A - No adjustments  
Reference line angle as tested \_\_\_\_\_



- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- X N/A – No adjustments
- Manufacturer's design seat back angle \_\_\_\_\_
- Tested seat back angle \_\_\_\_\_
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force 0.60 lb.
- X 0.0 to 0.7 pounds - Pass
- \_\_\_\_ greater than 0.7 pounds - FAIL

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?  
    \_\_\_ Yes (this form is complete)  
    ☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
    \_\_\_ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
    \_\_\_ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
    \_\_\_ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
    \_\_\_ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
    \_\_\_ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
    \_\_\_ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
    \_\_\_ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
    \_\_\_ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
    \_\_\_ N/A - No adjustments  
    Reference line angle as tested: \_\_\_\_\_

- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)  
☒ N/A No adjustments  
Manufacturer's design seat back angle \_\_\_\_\_  
Tested seat back angle \_\_\_\_\_
- ☒ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 14. Fasten the seat belt latch.
- ☒ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.  
Contact force 0.59 lb.  
☒ 0.0 to 0.7 pounds - Pass  
☐ greater than 0.7 pounds - FAIL

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): Third Row Left

DESIGNATED SEATING POSITION: R. Benavides

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?  
    \_\_\_ Yes (this form is complete)  
    ☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
    ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
    \_\_\_ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
    ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
    \_\_\_ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
    ☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
    ☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
    ☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
    \_\_\_ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
    ☒ N/A - No adjustments  
    Reference line angle as tested: \_\_\_\_\_

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- X N/A – No adjustments
- Manufacturer's design seat back angle \_\_\_\_\_
- Tested seat back angle \_\_\_\_\_
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force 0.59 \_\_\_\_\_ lb.
- X 0.0 to 0.7 pounds - Pass
- \_\_\_\_\_ greater than 0.7 pounds - FAIL

**DATA SHEET 10**  
**BELT CONTACT FORCE (S7.4.3)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?  
    Yes (this form is complete)  
    ☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
    ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
    ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
    ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
    ☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)  
    ☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
    ☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
    ☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)  
    Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)  
    ☒ N/A - No adjustments  
    Reference line angle as tested: \_\_\_\_\_

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)  
X N/A - No adjustments  
Manufacturer's design seat back angle \_\_\_\_\_  
Tested seat back angle \_\_\_\_\_
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.  
Contact force 0.59 lb.  
X 0.0 to 0.7 pounds - Pass  
\_\_\_\_\_ greater than 0.7 pounds - FAIL

**DATA SHEET 11**  
**LATCHPLATE ACCESS (S7.4.4)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)  
☒ N/A - No lumbar adjustment
- ☒ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
☒ N/A - No additional support adjustment
- ☒ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
☒ N/A - No independent seat cushion height adjustment.
- ☒ 5. Put the seat in its full rearward position. (S16.2.10.3.1)  
☐ N/A - the seat does not have a fore-aft adjustment
- ☒ 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
☐ N/A - No seat height adjustment
- ☒ 7. Draw a horizontal reference line on the side of the seat cushion
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- ☒ 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.  
☐ N/A - No adjustments  
Reference line angle as tested 0°



- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)  
    \_\_\_ N/A – No seat back angle adjustment  
    Manufacturer's design seat back angle 15.5°  
    Tested seat back angle 15.5°
- ☒ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
- ☒ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- ☒ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- ☒ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- ☒ 16. Place the latch plate in the stowed position.
- ☒ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?  
    ☒ Yes-Pass;      \_\_\_ No
- ☒ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?  
    ☒ Yes-Pass;      \_\_\_ No
- ☒ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?  
    ☒ Yes-Pass;      \_\_\_ No-FAIL
- ☒ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?  
    ☒ Yes-Pass;      \_\_\_ No-FAIL

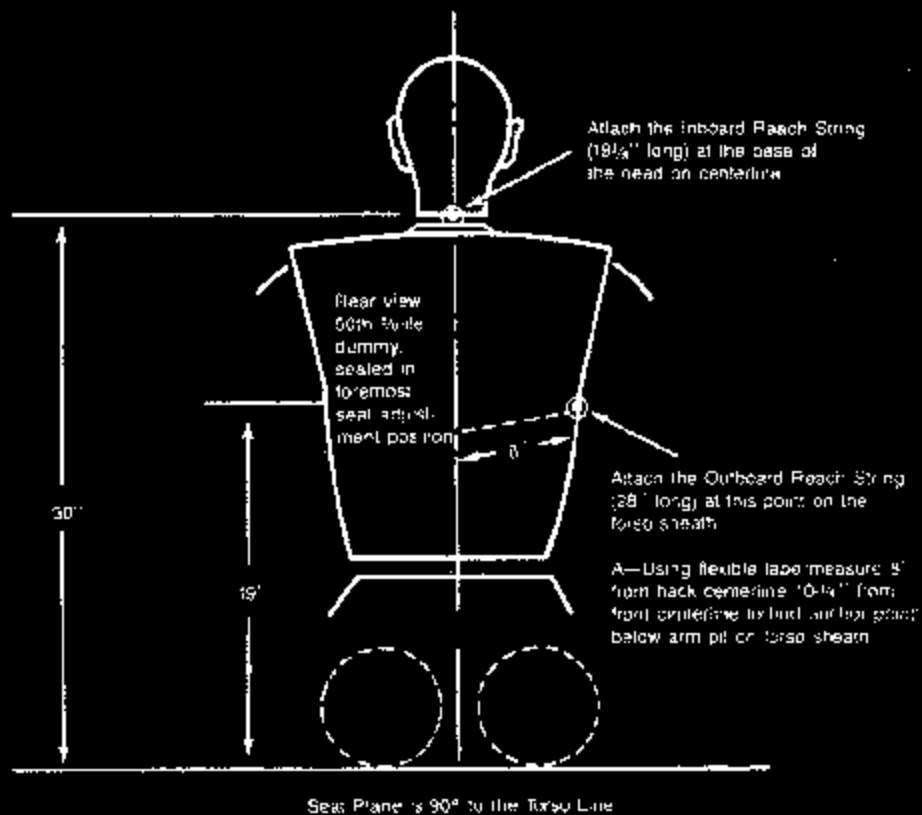


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

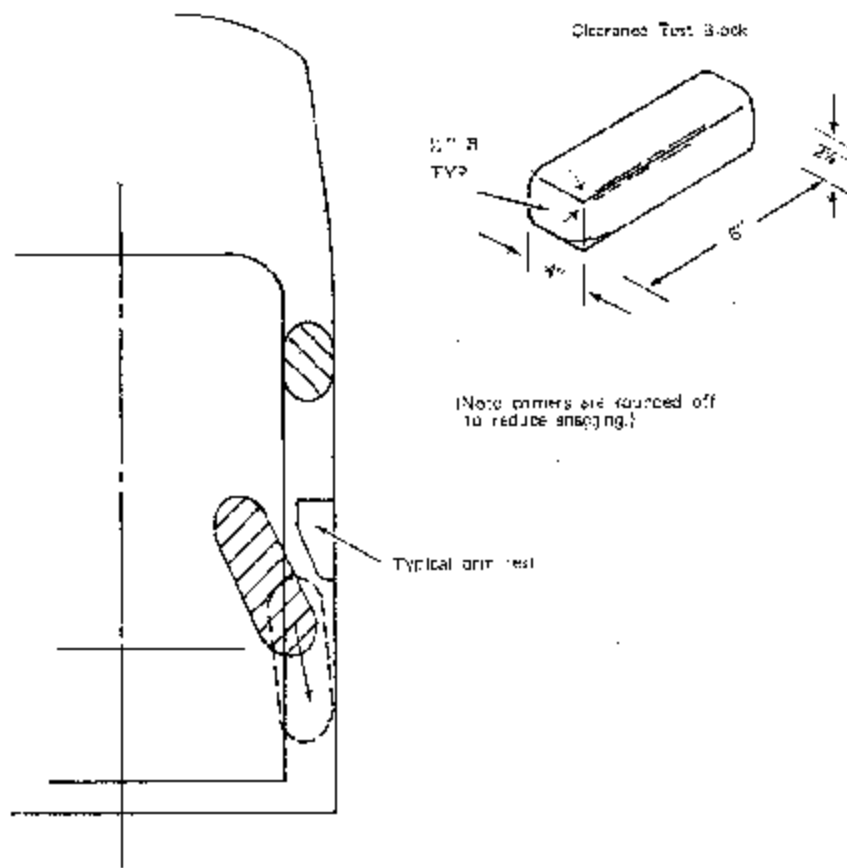


Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

**DATA SHEET 11**  
**LATCHPLATE ACCESS (S7.4.4)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)  
X N/A - No lumbar adjustment
- X 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
X N/A - No additional support adjustment
- X 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
X N/A - No independent fore-aft seat cushion adjustment
- X 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
X N/A - No independent seat cushion height adjustment.
- X 5. Put the seat in its full rearward position. (S16.2.10.3.1)  
     N/A - the seat does not have a fore-aft adjustment
- X 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
X N/A - No seat height adjustment
- X 7 Draw a horizontal reference line on the side of the seat cushion
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
     N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- X 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.  
X N/A - No adjustments  
Reference line angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)  
     \_\_\_ N/A -- No seat back angle adjustment  
     Manufacturer's design seat back angle 15.5°  
     Tested seat back angle 15.5°
- ☒ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart B dummy.) Include the positioning check sheet with this form.
- ☒ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- ☒ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- ☒ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- ☒ 16. Place the latch plate in the stowed position.
- ☒ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?  
     ☒ Yes-Pass;      \_\_\_ No
- ☒ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?  
     ☒ Yes-Pass;      \_\_\_ No
- ☒ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?  
     ☒ Yes-Pass;      \_\_\_ No-FAIL
- ☒ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?  
     ☒ Yes-Pass;      \_\_\_ No-FAIL

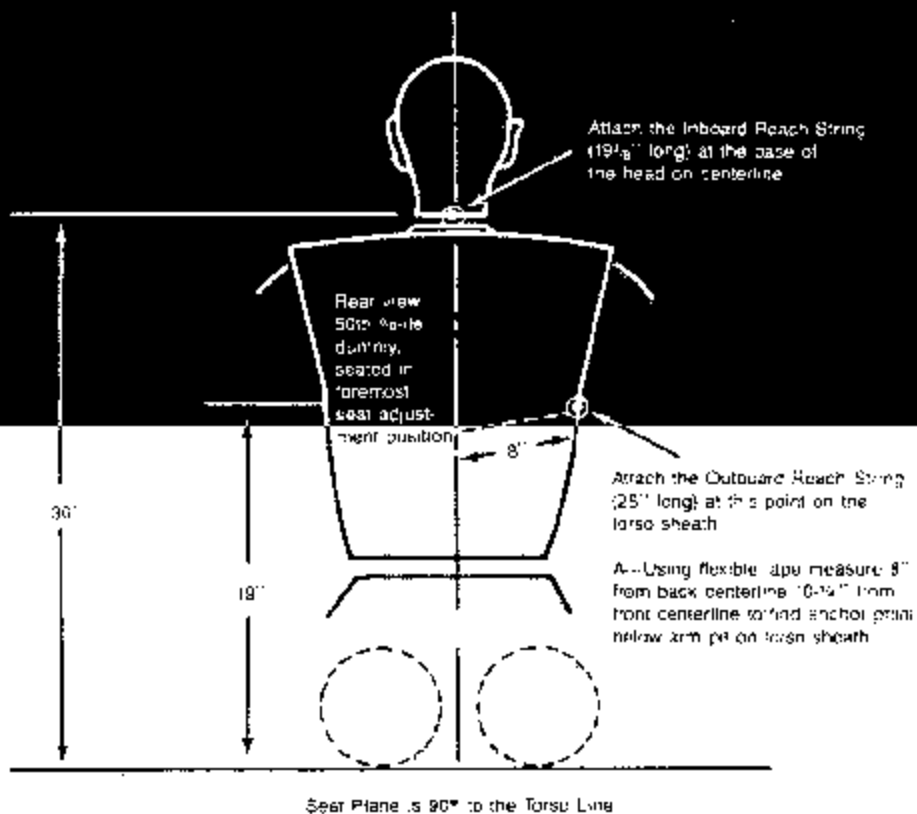


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Support E Test Device

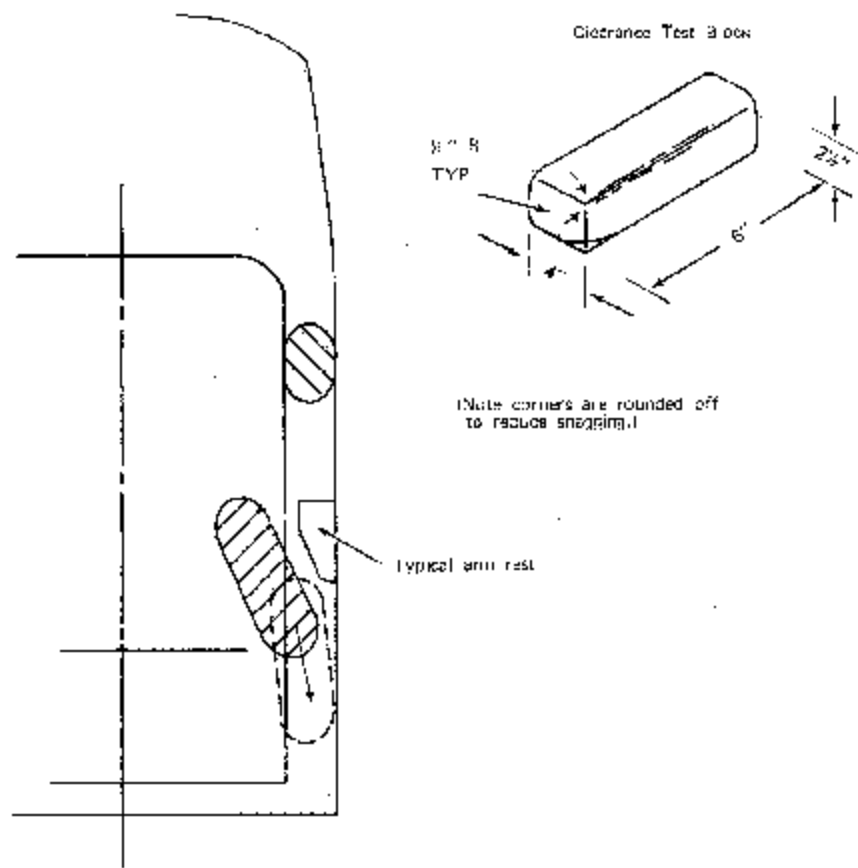


Figure 4 - USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

**DATA SHEET 12**  
**SEAT BELT RETRACTION (S7.4.5)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

GVWR: 3175 kg/7000 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the vehicle a passenger car or walk-in van-type vehicle?  
    \_\_\_ Yes, this form is complete  
    ☒ No
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
    ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
    ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
    ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
    ☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position.  
    ☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)  
    \_\_\_ N/A - No seat height adjustment
- ☒ 7 Draw a horizontal line on the side of the seat cushion.
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
    \_\_\_ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)  
    If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Center of 8 1/2 inch travel length
- ☒ 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)  
    \_\_\_ N/A - No seat adjustments  
    Reference angle as tested 0°



- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)  
     \_\_\_ N/A -- No seat back angle adjustment  
     Manufacturer's design seat back angle 15.5°  
     Tested seat back angle 15.5°
- ☒ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.  
     \_\_\_ N/A -- No head restraint adjustment
- ☒ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)  
     \_\_\_ N/A -- No adjustable upper seat belt anchorage  
     Manufacturer's specified anchorage position. \_\_\_\_\_  
     Tested anchorage position \_\_\_\_\_
- ☒ 14. Is the driver seat a bucket seat?  
     \_\_\_ Yes, go to 14.1 and skip 14.2.  
     \_\_\_ No, go to 14.2 and skip 14.1.
- ☒ 14.1 Bucket seats:  
     Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.  
     Record the width of the seat. 560 mm  
     Record the distance from the edge of the seat to Plane B. 280 mm
- \_\_\_ 14.2 Bench seats (including split bench seats):  
     \_\_\_ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.  
     \_\_\_ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.  
     Distance from the vehicle centerline to the center of the steering wheel \_\_\_\_\_  
     Distance from the vehicle centerline to Plane B \_\_\_\_\_
- ☒ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- ☒ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion.
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)  
     \_\_\_ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)  
     \_\_\_ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)  
     \_\_\_ pelvic angle (20° to 25°)  
     \_\_\_ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)  
     \_\_\_ pelvic angle (20° to 25°) (S10.4.2.2)
- ☒ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.  
     \_\_\_ measured distance (10.6 inches) (S10.5)

- ☒ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- ☒ 21. Fasten the seat belt around the dummy.
- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☐ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)  
☐ 3 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?  
☐ Yes, continue  
☒ No, go to 26
- ☐ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
- ☒ 26. Check the statement that applies to this test vehicle:
- ☒ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ☒ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ☐ 26.3 Neither A or B apply. ☐ FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?  
☐ N/A  
☒ Yes-Pass; ☐ No-FAIL

**DATA SHEET 12**  
**SEAT BELT RETRACTION (S7.4.5)**

NIHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

GVWR: 3175 kg/7000 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Is the vehicle a passenger car or walk-in van-type vehicle?  
    \_\_\_ Yes, this form is complete  
    X No
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)  
    X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
    X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
    X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
    X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position.  
    \_\_\_ N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)  
    X N/A - No seat height adjustment
- X 7 Draw a horizontal line on the side of the seat cushion.
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.  
    \_\_\_ N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)  
    If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Middle notch (12<sup>th</sup> of 23 positions)
- X 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)  
    X N/A - No seat adjustments  
    Reference angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)  
     \_\_\_ N/A – No seat back angle adjustment  
     Manufacturer's design seat back angle 15.5°  
     Tested seat back angle 15.5°
- ☒ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.  
     ☒ N/A – No head restraint adjustment
- ☒ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)  
     ☒ N/A – No adjustable upper seat belt anchorage  
     Manufacturer's specified anchorage position. \_\_\_\_\_  
     Tested anchorage position \_\_\_\_\_
- ☒ 14. Is the driver seat a bucket seat?  
     ☒ Yes, go to 14.1 and skip 14.2.  
     \_\_\_ No, go to 14.2 and skip 14.1.
- ☒ 14.1 Bucket seats:  
     Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.  
     Record the width of the seat. 560 mm  
     Record the distance from the edge of the seat to Plane B. 280 mm
- 14.2 Bench seats (including split bench seats):  
     \_\_\_ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.  
     \_\_\_ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.  
     Distance from the vehicle centerline to the center of the steering wheel \_\_\_\_\_  
     Distance from the vehicle centerline to Plane B \_\_\_\_\_
- ☒ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- ☒ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion.
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)  
     ☒ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)  
     ☒ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)  
     ☒ pelvic angle (20° to 25°)  
     ☒ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)  
     ☒ pelvic angle (20° to 25°) (S10.4.2.2)
- ☒ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.  
     \_\_\_ measured distance (10.6 inches) (S10.5)

- ☒ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- ☒ 21. Fasten the seat belt around the dummy.
- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☒ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)  
☒ 3 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?  
☐ Yes, continue  
☒ No, go to 26
- ☐ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25.
- ☒ 26. Check the statement that applies to this test vehicle:
- ☒ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ☒ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ☐ 26.3 Neither A or B apply. ☐ FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?  
☒ Yes-Pass; ☐ No-FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?  
☐ N/A  
☒ Yes-Pass; ☐ No-FAIL

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
\_\_\_\_ Yes; go to 5.  
☒ No; this form is complete.
- ... 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL  
Identify the part(s) on top of or above the seat.  
\_\_\_\_ seat belt latch plate; \_\_\_\_ buckle; \_\_\_\_ seat belt webbing
- \_\_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- ... 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- .. 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Center Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
    Yes; this form is complete  
    ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
    Yes; this form is complete  
    ☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
    Yes; this form is complete  
    ☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
    Yes; go to 5.  
    ☒ No; this form is complete.
- ☐ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
    Yes-Pass: ☐ No-FAIL  
    Identify the part(s) on top or above the seat.  
    ☐ seat belt latch plate; ☐ buckle; ☐ seat belt webbing
- ☐ 6. Are the remaining two seat belt parts accessible under normal conditions?  
    Yes-Pass: ☐ No-FAIL
- ☐ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
    Yes-Pass: ☐ No-FAIL
- ☐ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
    Yes-Pass: ☐ No-FAIL
- ☐ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
    Yes-Pass: ☐ No-FAIL
- ☐ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
    Yes-Pass: ☐ No-FAIL

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
\_\_\_\_ Yes; go to 5.  
☒ No; this form is complete.
- \_\_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL  
Identify the part(s) on top or above the seat.  
\_\_\_\_ seat belt latch plate; \_\_\_\_ buckle; \_\_\_\_ seat belt webbing
- \_\_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL



**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NIITSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
\_\_\_\_ Yes; this form is complete  
☒ No; go to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; go to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; go to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
\_\_\_\_ Yes; go to 5.  
☒ No; this form is complete.
- \_\_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL  
Identify the part(s) on top or above the seat.  
\_\_\_\_ seat belt latch plate; \_\_\_\_ buckle; \_\_\_\_ seat belt webbing
- \_\_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
\_\_\_\_ Yes; go to 5.  
☒ No; this form is complete.
- \_\_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
\_\_\_\_ Yes-Pass; \_\_\_\_ **No-FAIL**  
Identify the part(s) on top or above the seat.  
\_\_\_\_ seat belt latch plate; \_\_\_\_ buckle; \_\_\_\_ seat belt webbing
- \_\_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
\_\_\_\_ Yes-Pass; \_\_\_\_ **No-FAIL**
- \_\_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ **No-FAIL**
- \_\_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ **No-FAIL**
- \_\_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ **No-FAIL**
- \_\_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ **No-FAIL**

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
\_\_\_\_ Yes; go to 5.  
☒ No; this form is complete.
- \_\_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
Yes-Pass; \_\_\_\_ No-FAIL  
Identify the part(s) on top or above the seat.  
\_\_\_\_ seat belt latch plate; \_\_\_\_ buckle; \_\_\_\_ seat belt webbing
- \_\_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
Yes-Pass; \_\_\_\_ No-FAIL
- \_\_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
\_\_\_\_ Yes-Pass; \_\_\_\_ No-FAIL

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Left

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
    \_\_\_ Yes; this form is complete  
    ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
    ☒ Yes; this form is complete  
    \_\_\_ No; got to 3
- \_\_\_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
    \_\_\_ Yes; this form is complete  
    \_\_\_ No; got to 4
- \_\_\_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
    \_\_\_ Yes; go to 5.  
    \_\_\_ No; this form is complete.
- \_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
    \_\_\_ Yes-Pass;           \_\_\_ **No-FAIL**  
    Identify the part(s) on top or above the seat.  
    \_\_\_ seat belt latch plate; \_\_\_ buckle; \_\_\_ seat belt webbing
- \_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
    \_\_\_ Yes-Pass;           \_\_\_ **No-FAIL**
- \_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
    \_\_\_ Yes-Pass;           \_\_\_ **No-FAIL**
- \_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
    \_\_\_ Yes-Pass;           \_\_\_ **No-FAIL**
- \_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
    \_\_\_ Yes-Pass;           \_\_\_ **No-FAIL**
- \_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
    \_\_\_ Yes-Pass;           \_\_\_ **No-FAIL**

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Center

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
\_\_\_\_ Yes; this form is complete  
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
☒ Yes; this form is complete  
\_\_\_\_ No; got to 3
- \_\_\_\_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
\_\_\_\_ Yes; this form is complete  
\_\_\_\_ No; got to 4
- \_\_\_\_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
\_\_\_\_ Yes; go to 5.  
\_\_\_\_ No; this form is complete.
- \_\_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
\_\_\_\_ Yes-Pass;      \_\_\_\_ No-FAIL.  
Identify the part(s) on top or above the seat.  
\_\_\_\_ seat belt latch plate; \_\_\_\_ buckle; \_\_\_\_ seat belt webbing
- \_\_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
\_\_\_\_ Yes-Pass;      \_\_\_\_ No-FAIL
- \_\_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
\_\_\_\_ Yes-Pass;      \_\_\_\_ No-FAIL
- \_\_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
\_\_\_\_ Yes-Pass;      \_\_\_\_ No-FAIL
- \_\_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
\_\_\_\_ Yes-Pass;      \_\_\_\_ No-FAIL
- \_\_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
\_\_\_\_ Yes-Pass;      \_\_\_\_ No-FAIL

**DATA SHEET 13**  
**SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))  
    \_\_\_ Yes; this form is complete  
    ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))  
    ☒ Yes; this form is complete  
    \_\_\_ No; got to 3
- \_\_\_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))  
    \_\_\_ Yes; this form is complete  
    \_\_\_ No; got to 4
- \_\_\_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))  
    \_\_\_ Yes; go to 5.  
    \_\_\_ No; this form is complete.
- \_\_\_ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))  
    \_\_\_ Yes-Pass;      \_\_\_ No-FAIL  
    Identify the part(s) on top or above the seat.  
    \_\_\_ seat belt latch plate; \_\_\_ buckle; \_\_\_ seat belt webbing
- \_\_\_ 6. Are the remaining two seat belt parts accessible under normal conditions?  
    \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)  
    \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)  
    \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)  
    \_\_\_ Yes-Pass;      \_\_\_ No-FAIL
- \_\_\_ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)  
    \_\_\_ Yes-Pass;      \_\_\_ No-FAIL

# DATA SHEET 26

## VEHICLE WEIGHT, FUEL TANK, AND ATTITUDE DATA

NHTSA No.: C30104

Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): D. Ledley, B. Miller, M. Postle

Impact Angle: 0° Belted Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

- X 1. Fill the transmission with transmission fluid to the satisfactory range.
- X 2. Drain fuel from vehicle
- X 3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.
- X 4. Record the useable fuel tank capacity supplied by the COIR. 32.5 gal (123.0 l)
- X 5. Record the fuel tank capacity supplied in the owner's manual. 31.0 gal (117.3 l)
- 6.<sup>1</sup> Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," fill the fuel tank with an amount equal to the useable capacity provided by the COIR.  
Amount added
- X 7. Crank the engine to fill the fuel delivery system with Stoddard solvent.
- X 8. Fill the coolant system to capacity.
- X 9. Fill the engine with motor oil to the max. mark on the dip stick.
- X 10. Fill the brake reservoir with brake fluid to its normal level.
- X 11. Fill the windshield washer reservoir to capacity.
- X 12. Inflate the tires to the tire pressure on the tire placard. If no tire placard is available, inflate the tires to the recommended pressure in the owner's manual.  
Tire placard pressure RF 35; LF 35; RR 35; LR 35  
Owner's manual pressure<sup>2</sup> RF N/A; LF N/A; RR N/A; LR N/A  
Actual inflated pressure RF 35; LF 35; RR 35; LR 35
- X 13. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight).  
Right Front = 581.0 kg Right Rear = 616.0 kg  
Left Front = 658.5 kg Left Rear = 607.0 kg  
TOTAL FRONT = 1239.5 kg TOTAL REAR = 1223.0 kg  
% Total Weight = 50.3 % % Total Weight = 49.7 %  
UVW - TOTAL FRONT PLUS TOTAL REAR = 2462.5 kg
- X 14. UVW Test Vehicle Attitude: (all dimensions in millimeters)
  - X 14.1 Mark a point on the vehicle above the center of each wheel.
  - X 14.2 Place the vehicle on a level surface.
  - X 14.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements  
RF 913; LF 914; RR 933; LR 930

- X 15. Calculate the Rated Cargo and Luggage Weight (RCLW).
- X 15.1 Does the vehicle have the vehicle capacity weight (VCW) on the certification label or tire placard?
- Yes, go to 15.3.
- X No, go to 15.2.
- X 15.2  $VCW = \text{Gross Vehicle Weight} - UVW$   
 $VCW = 3175 - 2462.5 = 712.5$
- X 15.3  $VCW = 712.5$
- X 15.4 Does the certification or tire placard contain the Designated Seating Capacity (DSC)?
- Yes, go to 15.6.
- X No, go to 15.5.
- X 15.5  $DSC = \text{Total number of seat belt assemblies} = 9$
- X 15.6  $DSC = 9$
- X 15.7  $RCLW = VCW - (68 \text{ kg} \times DSC) = 712.5 - (68 \text{ kg} \times 9) = 100.5$
- X 15.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?
- X Yes, the maximum RCLW is 136 kg.
- No, use the RCLW calculated in 15.7.
- X 16. Fully Loaded Weight (100% fuel fill)
- X 16.1 Place the appropriate test dummy in both front outboard seating positions.
- Driver: X 5<sup>th</sup> female      50<sup>th</sup> male
- Passenger: X 5<sup>th</sup> female      50<sup>th</sup> male
- X 16.2 Load the vehicle with the RCLW from 15.7 or 15.8 whichever is applicable.
- X 16.3 Place the RCLW in the cargo area. Center the load over the longitudinal centerline of the vehicle. (S8.1.1 (d))
- X 16.4 Record the vehicle weight at each wheel to determine the Fully Loaded Weight.
- |                |   |           |                |   |           |
|----------------|---|-----------|----------------|---|-----------|
| Right Front    | = | 605.6 kg  | Right Rear     | = | 699.4 kg  |
| Left Front     | = | 685.4 kg  | Left Rear      | = | 689.0 kg  |
| TOTAL FRONT    | = | 1291.0 kg | TOTAL REAR     | = | 1388.4 kg |
| % Total Weight | = | 48.2 %    | % Total Weight | = | 51.8 %    |
| % GVW          | = | 40.7 %    | % GVW          | = | 59.3 %    |
- FULLY LOADED WEIGHT = TOTAL FRONT + TOTAL REAR = 2679.4 kg
- X 17. Fully Loaded Test Vehicle Attitude: (all dimensions in millimeters)
- X 17.1 Place the vehicle on a level surface.
- X 17.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 14.1 above) and record the measurements
- RF 905; LF 905; RR 908; LR 910
- X 18.<sup>3</sup> Calculate the test weight range (94% fuel fill).
- X 18.1 Calculated Test Weight = Fully Loaded Condition (See 16.4 above) - ((.06 x useable fuel tank capacity) x 0.79 kg/liter)
- Calculated Test Weight = 2679.4 - (.06 x 117.3 l x 0.79 kg/l) = 2673.8 kg
- X 18.2 Test Weight Range = Calculated Test Weight (- 4.5 kg, - 9 kg.)
- Max. Weight = Calculated Test Weight - 4.5 kg = 2669.3
- Min. Weight = Calculated Test Weight - 9 kg = 2664.8
- X 19. Remove the RCLW from the cargo area.



- 20.<sup>4</sup> Remove Stoddard solvent from the gas tank in the amount of 6% of the useable capacity as supplied by the COTR.  $.06 \times \underline{\hspace{2cm}}$  (useable capacity) =  $\underline{\hspace{2cm}}$   
Amount removed  $\underline{\hspace{2cm}}$
- X 21. Drain transmission fluid, engine coolant, motor oil, and windshield washer fluid from the test vehicle so that Stoddard solvent leakage from the fuel system will be evident.
- X 22. Vehicle Components Removed For Weight Reduction:  
None
- 
- X 23. Secure the equipment and ballast in the load carrying area and distribute it, as nearly as possible, to obtain the proportion of axle weight indicated by the gross axle weight ratings and center it over the longitudinal centerline of the vehicle.
- X 24. If necessary, add ballast to achieve the actual test weight.  
N/A  
Weight of ballast 58.1 kg
- X 25. Ballast, including test equipment, must be contained so that it will not shift during the impact event or interfere with data collection or interfere with high-speed film recordings or affect the structural integrity of the vehicle or do anything else to affect test results. Care must be taken to assure that any attachment hardware added to the vehicle is not in the vicinity of the fuel tank or lines.
- X 26. Record the vehicle weight at each wheel to determine the actual test weight.

Right Front	=	<u>636.4</u>	kg	Right Rear	=	<u>699.6</u>	kg
Left Front	=	<u>671.8</u>	kg	Left Rear	=	<u>676.5</u>	kg
TOTAL FRONT	=	<u>1308.2</u>	kg	TOTAL REAR	=	<u>1376.1</u>	kg
% Total Weight	=	<u>48.7</u>	%	% Total Weight	=	<u>51.3</u>	%
% GVW	=	<u>41.2</u>	%	% GVW	=	<u>58.8</u>	%

(%GVW = Axle GVW : Vehicle GVW)

- TOTAL FRONT PLUS TOTAL REAR = 2684.3 kg
- X 27. Is the test weight between the Max. Weight and the Min. Weight (See 18.2)?  
Yes  
X No, explain why not. See Section 4.0, Discussion of Test Results
- 
- X 28. Test Weight Vehicle Attitude: (all dimensions in millimeters)
- X 28.1 Place the vehicle on a level surface.
- X 28.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 3 above) and record the measurements  
RF 910 ; LF 900 ; RR 898 ; LR 911

X 29. Summary of test attitude

X 29.1

AS DELIVERED: RF 913; LF 914; RR 933; LR 930

AS TESTED: RF 910; LF 900; RR 898; LR 911

FULLY LOADED: RF 905; LF 905; RR 908; LR 910

X 29.2 Is the "as tested" test attitude equal to or between the "fully loaded" and "as delivered" attitude?

     Yes

X No, explain why not. COTR approved on day of test.

<sup>1</sup> At this step the gasoline in the fuel tank was topped off (Stoddard was not introduced until after fully loaded weight and attitudes were obtained). The exact amount of fuel in the tank was unknown.

<sup>2</sup> The Owner's Manual said to see Certification/Tire Label for tire pressure.

<sup>3</sup> The fuel tank capacity supplied in the Owner's Manual was used per the COTR.

<sup>4</sup> At this step Stoddard solvent was introduced into the drained fuel tank: 0.94 x 117.3 liter (from Owner's Manual per COTR). A total of 110.3 liters was added.

**DATA SHEET 27**  
**Vehicle Accelerometer Location**

NHTSA No.: C30104

Test Date: 11/12-13/02

Laboratory: TRC Inc. Test Technician(s): D. Ledley

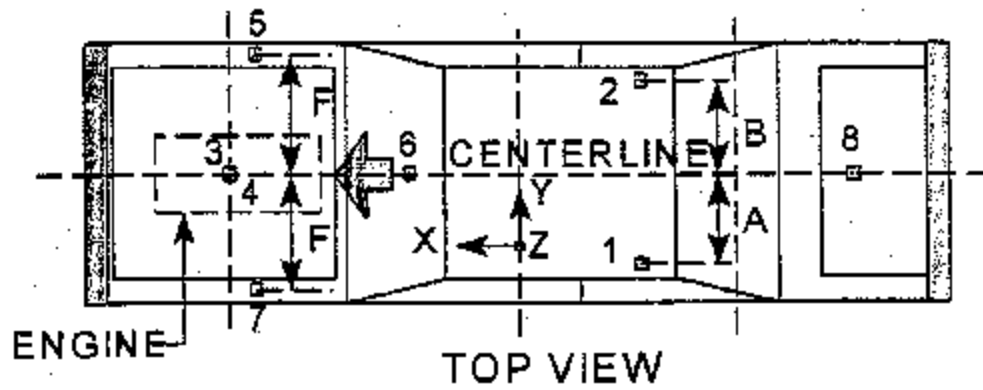
Impact Angle: 0° Belted Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

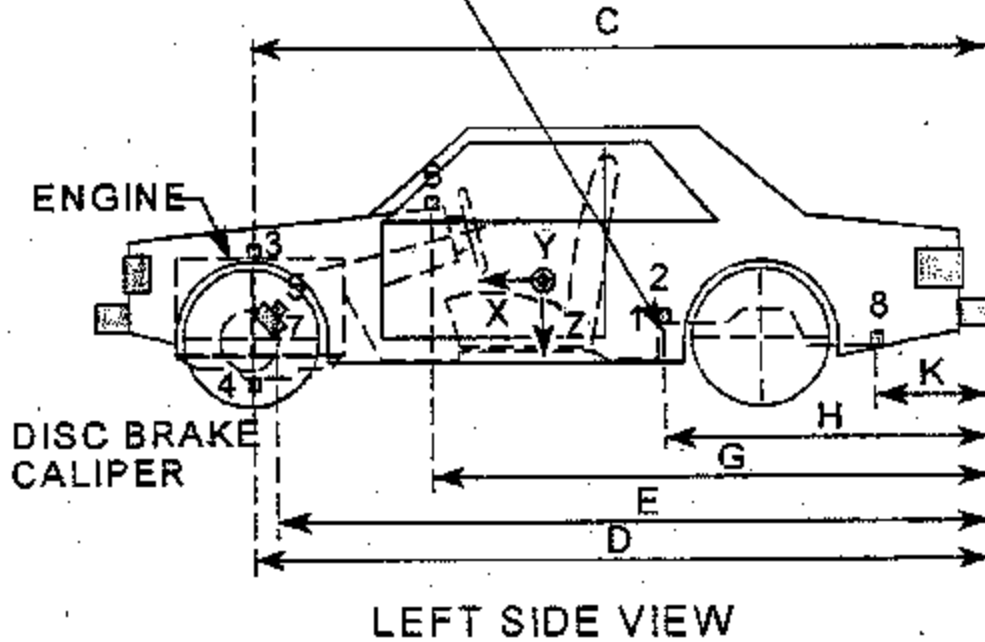
Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

- X 1. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the left front outboard seating position intersects the left rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 2. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the right front outboard seating position intersects the right rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 3. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect at the top of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 4. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect the bottom of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 5. Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 6. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the top of the instrument panel. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 7. Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 8. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the floor of the trunk. Install an accelerometer on the trunk floor at this intersection to record z-direction accelerations. Record the location on the following chart.

# VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION  
ASSY. FRONT ATTACHMENT  
BRACKET SUPPORT



DATA SHEET 27  
VEHICLE ACCELEROMETER LOCATION MEASUREMENTS

<u>DIMENSION</u>	<u>LENGTH (mm)</u>
<b>PRE-TEST VALUES</b>	
<u>A</u>	*
<u>B</u>	*
<u>C</u>	4642
<u>D</u>	4350
<u>E</u>	4480 left; 4480 right
<u>F</u>	*
<u>G</u>	3786
<u>H</u>	2445 left; 2405 right
<u>K</u>	303
<b>POST-TEST VALUES</b>	
<u>A</u>	710
<u>B</u>	657
<u>C</u>	4642
<u>D</u>	4367
<u>E</u>	4400 left; 4527 right
<u>F</u>	*
<u>G</u>	3786
<u>H</u>	2450 left; 2410 right
<u>K</u>	305

REMARKS: \* Several lateral measurements were inadvertently omitted.

# **DATA SHEET 28** Photographic Targets

NHTSA No.: C30104

Test Date: 11/12-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, B. Miller, J. Clarridge, M. Postle

Impact Angle: 0° Offset percentage: 40 Belied Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

1. FMVSS 208 vehicle targeting requirements (See Figures 28A and 28B)
  - X 1.1 Targets A1 and A2 are on flat rectangular panels.
  - X 1.2 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the front on the outboard sides of A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 mm
  - X 1.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the back on the outboard sides of on A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 mm
  - X 1.4 The distance between the first circular target at the front of A1 and A2 and the last circular target at the back of A1 and A2 is at least 915 mm.  
Distance between the first and last circular targets 915 mm
  - X 1.5 Firmly fix target A1 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy.
  - X 1.6 Firmly fix target A2 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
  - X 1.7 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the driver door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
  - X 1.8 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the passenger door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
  - X 1.9 Place tape with squares having alternating colors on the top portion of the steering wheel.
  - X 1.10 Chalk the bottom portion of the steering wheel.
  - X 1.11 Is this an offset test?  
X Yes, continue with this section  
     No, go to 2.
  - X 1.12 Measure the width of the vehicle. Vehicle width 1994 mm
  - X 1.13 Find the centerline of the vehicle. (½ of the vehicle width)
  - X 1.14 Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.
  - X 1.15 Apply 25 mm wide tape with alternating black and yellow squares parallel to and on each side of the line found in 1.14. The edge of each tape shall be 50 mm from the line found in 1.14. The tape shall extend from the bottom of the bumper to the front edge of the windshield. (Figure 28D)

2. Barrier targeting
- ☒ 2.1 Fix two stationary targets D1 and D2 to the barrier as shown in the Figure 28A. One target is in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy. The other is in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
- Only one target over driver dummy.
- ☒ 2.2 Targets D1 and D2 are on a rectangular panel. No D2 target
- ☒ 2.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted on the sides of the rectangular panel away from the longitudinal centerline of the vehicle. The center of each circular target is 100 mm from the one next to it.
- Distance between circular targets on D1 127 mm
- Distance between circular targets on D2 N/A mm
3. FMVSS 208 dummy targeting requirements
- ☒ 3.1 Place a circular target with black and yellow quadrants on both sides of the driver dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
- ☒ 3.2 Place a circular target with black and yellow quadrants on both sides of the passenger dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
- ☒ 3.3 Place a circular target with black and yellow quadrants on the outboard shoulder of the driver dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
- ☒ 3.4 Place a circular target with black and yellow quadrants on the outboard shoulder of the passenger dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
4. FMVSS 204 targeting requirements
- ☒ 4.1 Is an FMVSS 204 indicant test ordered on the "COTR Vehicle Work Order?"
- Yes, continue with this form.
- ☒ No, this form is complete
- 4.2 Rosection panel (Figure 28C)
- 4.2.1 The panel deviates no more than 6 mm from perfect flatness when suspended vertically.
- 4.2.2 The 8 targets on the panel are circular targets at least 90 mm in diameter and with black and yellow quadrants.
- 4.2.3 The center of each of the 4 outer targets are placed within 1 mm of the corners of a square measuring 914 mm on each side.
- 4.2.4 Locate another square with 228 mm sides and with the center of this square coincident with the center of the 914 mm square.
- 4.2.5 The center of the 4 inner targets are placed at the midpoints of each of the 228 mm sides.
- 4.3 Place a circular target at least 90 mm in diameter and with black and yellow quadrants on a material (cardboard, metal, etc.) that can be taped to the top of the steering column.
- 4.4 Tape the target from 4.3 to the top of the steering column in a manner that does not interfere with the movement of the steering column in a crash.

## REFERENCE PHOTO TARGETS

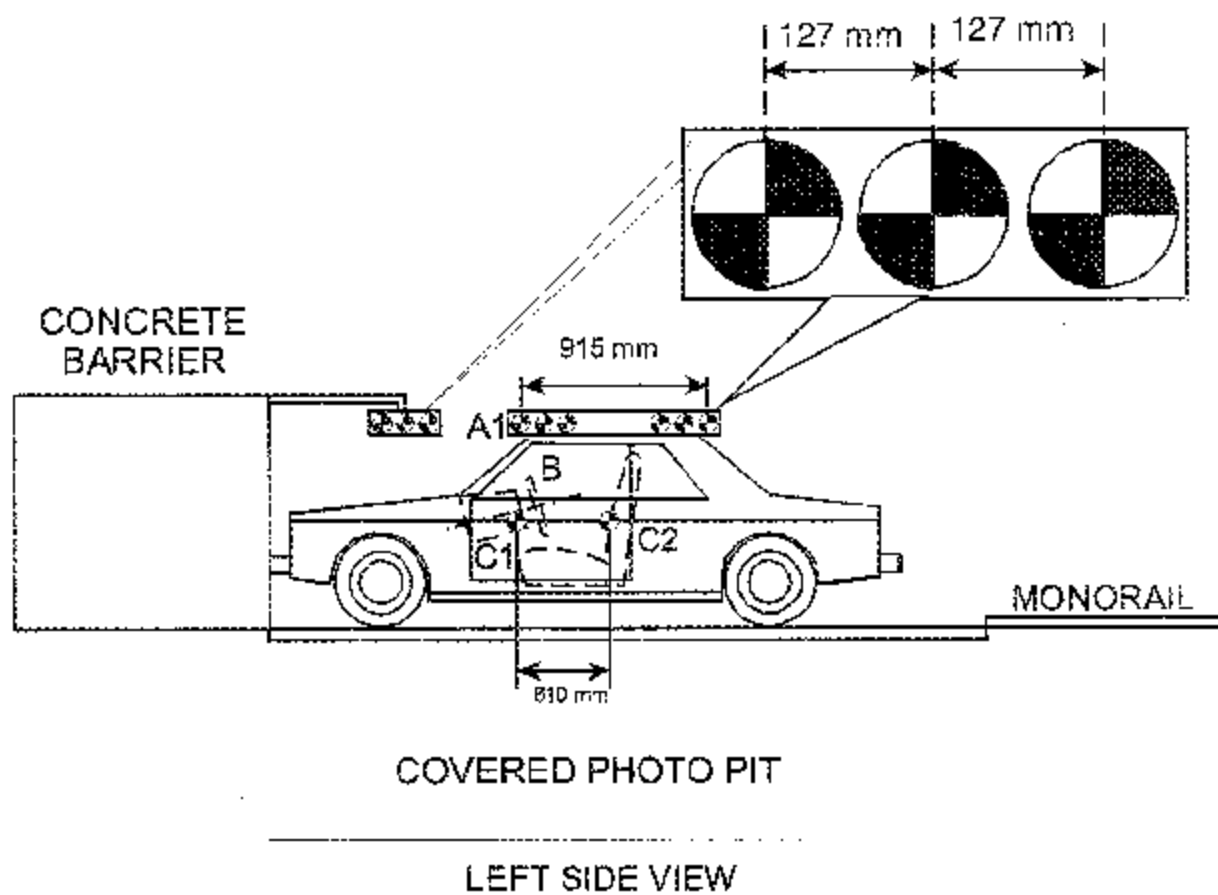
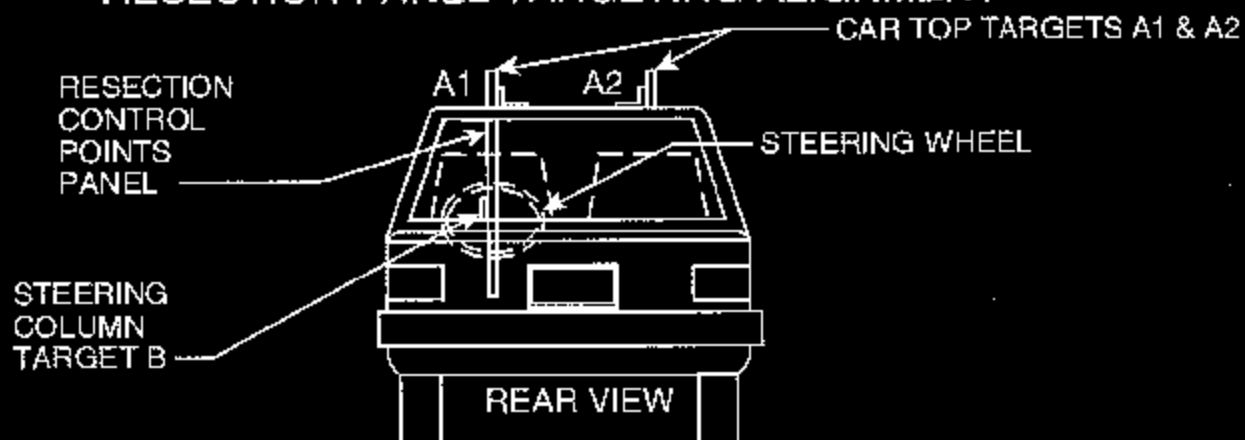


FIGURE 28A



## RESECTION PANEL TARGETING ALIGNMENT



## TEST RUN STEERING COLUMN CAMERA VIEW OF TYPICAL TIME ZERO VEHICLE POSITION

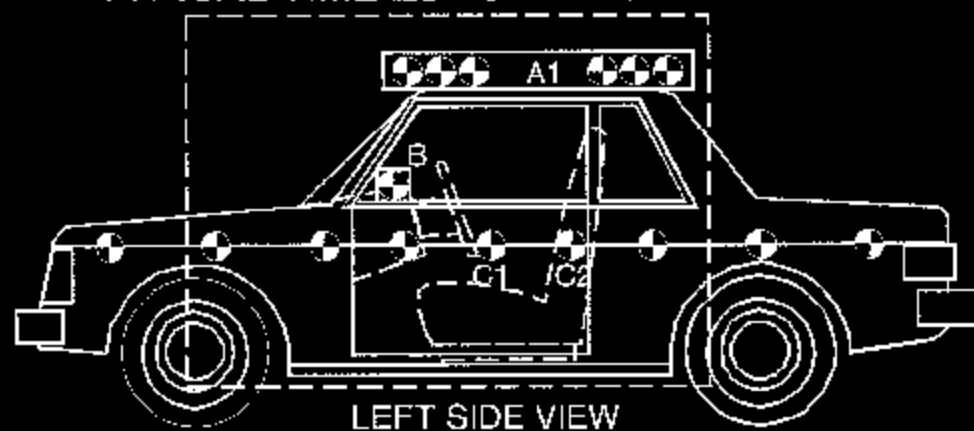
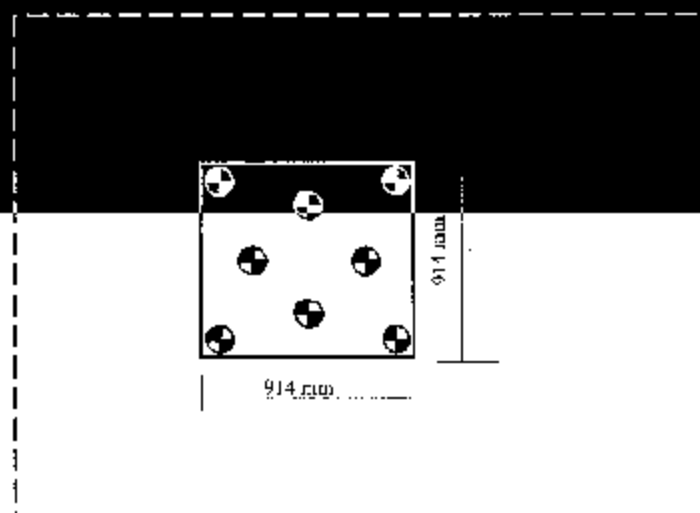


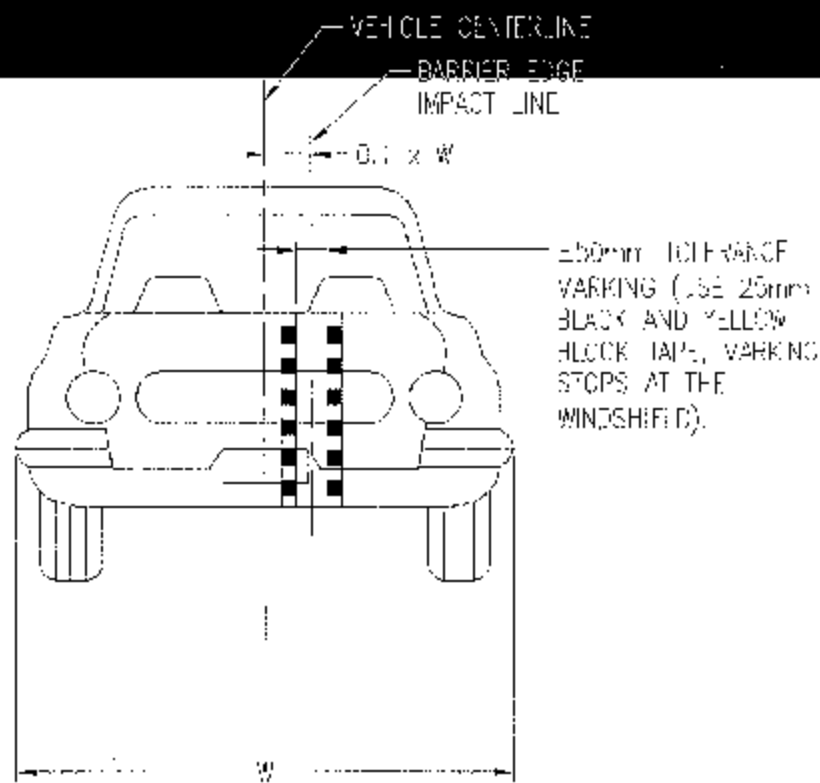
FIGURE 28B

# PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW



LEFT SIDE VIEW

FIGURE 28C



## OFFSET DEFORMABLE BARRIER ADDITIONAL VEHICLE TARGETING

**FIGURE 28D**

**DATA SHEET 29**  
**CAMERA LOCATIONS**

VEH. NHTSA No.: C30104 ; TEST DATE: 11/14/02 ; TIME: 1617

VEH. YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (deg.)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side Panning View	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	36mm	24
2	Left Side View (barrier face to front seat backs)	-1000	-8250	-1090	0	8090	25	1000
3	Left Side View (A-post)	-2830	-7585	-1550	-0.5	7104	35	1010
4	Left Side View (B-post aimed toward center of steering wheel)	-5510	-4710	-1970	-10	4040	25	1000
5	Left Side View (B-post)	-3750	-7790	-1470	2	7212	35	1000
6	Left Side View (front door under camera 5)	-2370	-7930	-1180	-1	7445	25	1000
7 <sup>2</sup>	Right Side View (overall)	-1730	9130	-1334	-3	8730	13	1000
8	Right Side View (A-post)	-2490	6709	-1579	-2	6154	25	1000
9	Right Side View (B-post-angled)	-6130	4930	-1930	-6	4026	25	1000
10	Right Side View (front door)	-2220	7030	-1180	1	6473	25	1000
11 <sup>3</sup>	Front View Windshield	1970	0	-2600	-37	4570	8.5	1000
12 <sup>3</sup>	Front View Driver	1990	-255	-2630	-25	4590	25	1000
13 <sup>3</sup>	Front View Passenger	1950	250	-2630	-25	4530	25	1000
14 <sup>2</sup>	Overhead Barrier Impact View	530	0	-5600	-90	NA <sup>1</sup>	25	1000
15	Pit Camera Engine View	-500	-120	850	90	NA <sup>1</sup>	13	997
16	Pit Camera Fuel Tank View	-2190	-120	1010	90	NA <sup>1</sup>	13	NA <sup>3</sup>

\* +X - film plane forward (downstream) from barrier impact surface

+Y - film plane to right of monorail centerline from driver's perspective

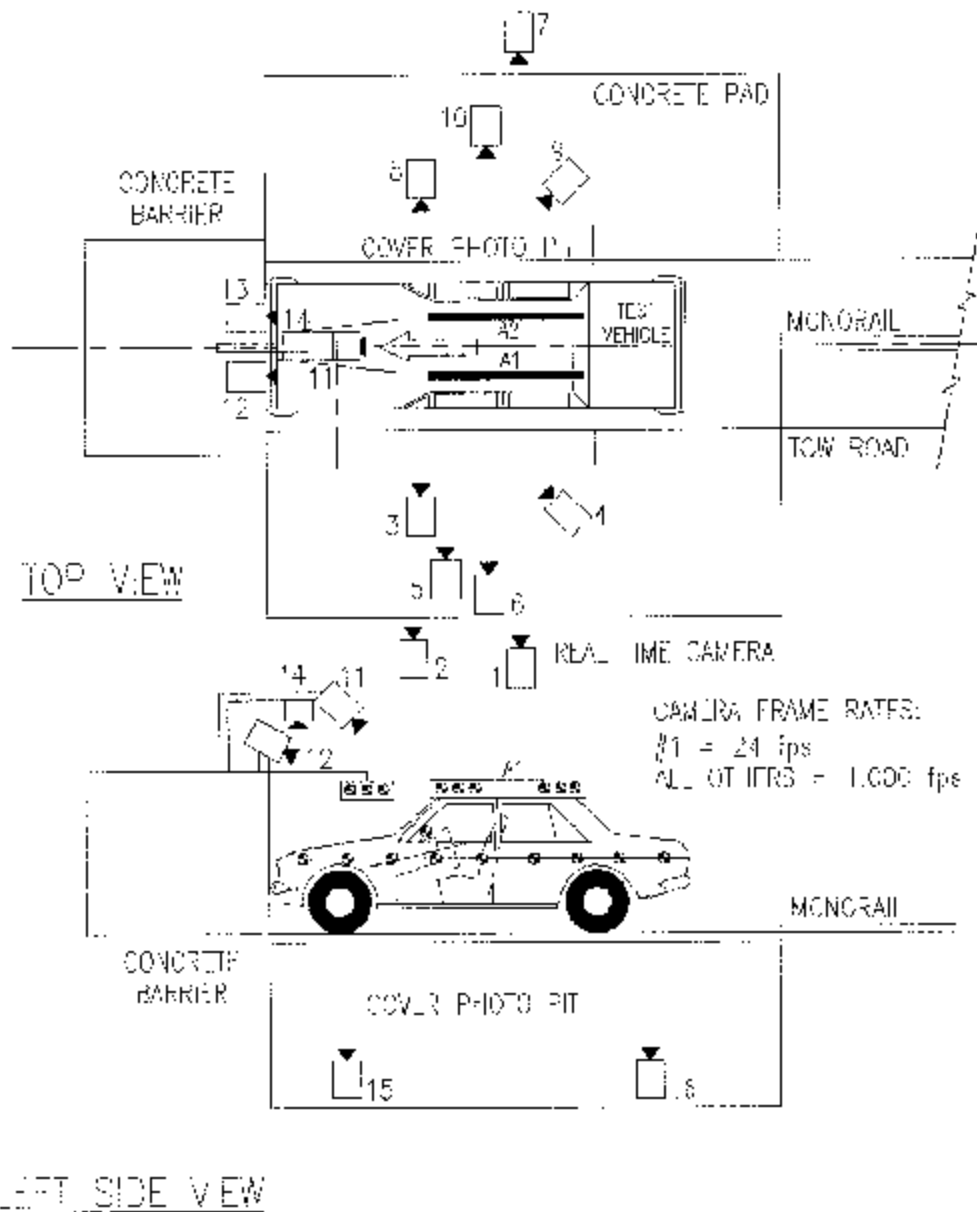
+Z - film plane below ground level

<sup>1</sup> Not applicable

<sup>2</sup> Digital camera

<sup>3</sup> Unable to determine speed, no timing LED's.

## CAMERA POSITIONS FOR FRONTAL IMPACTS



**DATA SHEET 30 - DRIVER**  
**DUMMY POSITIONING PROCEDURES FOR TEST DUMMY CONFORMING TO**  
**SUBPART O OF PART 572**

**Seating Procedure 5<sup>th</sup> Percentile Female Driver Dummy (Part 572, Subpart O)**  
**(S16.2- S16.3)**

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle

Test Number: 021114

Seat Type:      Bench   X   Bucket      Split Bench  
(Check One)

**1.0 Seat Positioning (S16.2.10)**

- X   1.1 Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)  
  X   N/A - No lumbar adjustment
- X   1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
  X   N/A - No additional support adjustment
- X   1.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
  X   N/A - No independent fore-aft seat cushion adjustment
- X   1.4 If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
     N/A - No independent seat cushion height adjustment.
- X   1.5 Put the seat in its full rearward position. (S16.2.10.3. )  
     N/A - the seat does not have a fore-aft adjustment
- X   1.6 If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
  X   N/A - No seat height adjustment
- X   1.7 Draw a horizontal line on the side of the seat cushion.
- X   1.8 Using only the controls which change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position rearward of the mid-point), and R for full rearward.  
     N/A - The seat does not have a fore-aft adjustment.
- X   1.9 Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)  
     N/A - The seat does not have a fore-aft adjustment.
- X   1.10 If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)  
     N/A - No adjustments
- Angle of the line on side of the seat cushion in the full forward position.   0.3   degrees

- X 1.11 If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)
- X 1.12 Record the mid height position. (S16.2.10.3.3)
- N/A – No seat height adjustment
- Max. height from S1 117 mm
- Min. height from S1 88 mm
- Test height from S1 102 mm
- Angle of line on seat cushion at test height, 0.3 degrees
- X 1.13 Record the horizontal longitudinal distance between Point S1 and Point S2.
- S1, S2 separation, 5 mm

## 2.0 Dummy Positioning

- X 2.1 Is the seat a bucket seat? X Yes      No
- If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.
- 2.1.1 Bucket seats:
- Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.1.10) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
- Record the width of the seat cushion. 555 mm
- Record the distance from the edge of the seat cushion to the vertical plane. 277.5 mm
- 2.1.2 Bench seats and split bench seats:
- Mark a longitudinal vertical plane that coincides with the center of the steering wheel (S16.3.2.1.4)
- X 2.2 If the vehicle has an adjustable accelerator pedal, place it in the full forward position. (S16.3.2.2.1)
- X N/A accelerator pedal not adjustable
- X 2.3 With the seat in the position from step 1.11, move the seat to the full rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.2.1.1)
- X 2.4 Fully recline the seat back. (S16.3.2.1.2)
- N/A seat back not adjustable.
- X 2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.2.1.2)
- X 2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.2.1.3)
- X 2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.2.1.6)
- X 2.8 Set the angle between the legs and the thighs to 120 degrees.
- X 2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm. (6.3 to 6.7 inches) Center the knee separation with respect to the seat centerline. (S16.3.2.1.6)
- Record Knee Separation 165 mm
- X 2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.2.1.6)
- Pelvis contacted seat back.
- X Calves contacted seat cushion.
- X 2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.2.1.7)
- X 2.12 If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.2.1.8)
- X 2.13 Position the right foot until the foot is in line with a longitudinal vertical plane passing through the center of the accelerator pedal. Maintain the leg and thigh in a vertical plane. (S16.3.2.1.8)

- ☒ 2.14 Rotate the left leg and thigh laterally to equalize the distance between each knee and the seating position centerline. (S16.3.2.1.8)
- ☒ 2.15 Using only the controls that move the seat fore and aft, attempt to return the seat to the full forward position. The right foot may contact and depress the accelerator and/or change the angle of the foot with respect to the leg. (S16.3.2.1.8)
- ☒ Full forward position achieved. Proceed to step 2.20.
- ☐ Full forward not achieved because of foot interference. Proceed to step 2.17
- ☐ Full forward not achieved because of steering wheel contact.
- ☒ 2.16 If the dummy's legs contact the steering wheel, move the steering wheel up the minimum amount required to avoid contact. If the steering wheel is not adjustable separate the knees the minimum required to avoid contact. (S16.3.2.1.8)
- ☒ N/A- there was no leg contact
- ☐ Steering wheel repositioned
- ☐ Knees separated
- ☒ 2.17 If the left foot interferes with the clutch or brake pedals, rotate the left foot about the leg to provide clearance. If this is not sufficient, rotate the left thigh outboard at the hip the minimum amount required for clearance. (S16.3.2.1.8)
- ☒ N/A No foot interference with pedals.
- ☐ Foot adjusted to provided clearance.
- ☐ Foot and Thigh adjusted to provide clearance.
- ☒ 2.18 Continue to move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.2.1.8)
- ☒ Full Forward reached
- Dummy contact. Clearance set at maximum of 5mm
- Measured Clearance \_\_\_\_\_
- ☐ Dummy Contact. Seat set at nearest detent position.
- Seat position \_\_\_\_\_ detent positions rearward of full forward
- (full forward is position zero)
- ☒ 2.19 If the steering wheel was repositioned in step 2.16, return the steering wheel to the original position. If the steering wheel contacts the dummy before reaching the original position, position the wheel until a maximum clearance of 5mm (.2 inches) is achieved, or the steering wheel is in the closest detent position that does not cause dummy contact.
- ☐ N/A Steering wheel was not repositioned.
- ☒ Original position achieved.
- ☐ Dummy contact. Clearance set at maximum of 5mm
- Measured Clearance \_\_\_\_\_
- ☐ Dummy Contact. Steering wheel set at nearest detent position.
- Steering wheel position \_\_\_\_\_ detent positions upward of original position.
- (Original position is position zero)
- ☒ 2.20 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level  $\pm 0.5$  degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle.
- ☒ Head Level Achieved. (Check all that apply)
- ☒ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle 0 degrees
- ☐ Head Level NOT Achieved. (Check all that apply)
- ☐ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle \_\_\_\_\_ degrees
- ☒ 2.21 Verify the pelvis is not interfering with the seat bight.



- ☒ 2.22 Verify the dummy abdomen is properly installed.
- ☒ 2.23 If the dummy torso contacts the steering wheel while performing step 2.20, reposition the steering wheel in the following order to eliminate contact.
- ☒ N/A No dummy torso contact with the steering wheel.
- ☐ 2.23.1 Adjust telescoping mechanism.
- ☐ N/A No telescoping adjustment.
- ☐ Adjustment performed (fill in appropriate change)
- Steering wheel moved  detent positions in the forward direction.
- Steering wheel moved  mm in the forward direction.
- ☐ 2.23.2 Adjust tilt mechanism.
- ☐ N/A No tilt adjustment.
- ☐ No adjustment performed.
- ☐ Adjustment performed.
- Steering wheel moved  detent positions Upward/Downward.
- (circle one)
- Steering wheel moved  degrees Upward/Downward
- ☐ 2.23.3 Adjust Seat in the aft direction.
- ☐ No Adjustment performed.
- ☐ Seat moved aft  mm from original position.
- ☐ Seat moved aft  detent positions from the original position.
- ☒ 2.24 Measure and set the pelvic angle using the pelvic angle gage 'FF-2504. The pelvic angle should be 20.0 degrees  $\pm$  2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference.
- ☒ Pelvic angle set to 20.0 degrees  $\pm$  2.5 degrees.
- ☐ Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.
- ☒ Record the pelvic angle. 21.4 degrees
- ☒ 2.25 Check the dummy for contact with interior after completing adjustments.
- ☒ No contact.
- ☐ Dummy in contact with interior.
- ☐ Seat moved Aft  mm from the previous position.
- ☐ Seat moved Aft  detent positions from the previous position.
- ☒ 2.26 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward.
- ☒ N/A Seat already at full forward position.
- ☐ Clearance unchanged. No adjustments required.
- ☐ Additional clearance available
- ☐ Seat moved Forward  mm from the previous position.
- ☐ Seat moved Forward  detent positions from the previous position.
- ☒ 2.27 Driver's foot positioning, right foot
- ☒ 2.27.1 Place the foot perpendicular to the leg and determine if the right heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.28 otherwise, proceed to step 2.29.
- ☒ 2.28 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.28.6 shall be completed in all cases.
- ☒ 2.28.1 With the rear of the heel contacting the floor pan, move the foot forward until pedal contact occurs or the foot is at the full forward position.
- ☒ 2.28.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position.
- ☐ 2.28.3 Extend the leg, allowing the heel to lose contact with the floor until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

- \_\_\_\_ 2.28.4 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- \_\_\_\_ 2.28.5 Align the center line of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- X 2.28.6 Record foot position
  - X Pedal Contact achieved. Contact occurred at step 2.28.2
  - X Heel contacts floor pan
  - \_\_\_\_ Heel set \_\_\_\_ mm from floor pan.
  - \_\_\_\_ Pedal Contact not achieved. Heel set \_\_\_\_ mm from the floor pan.

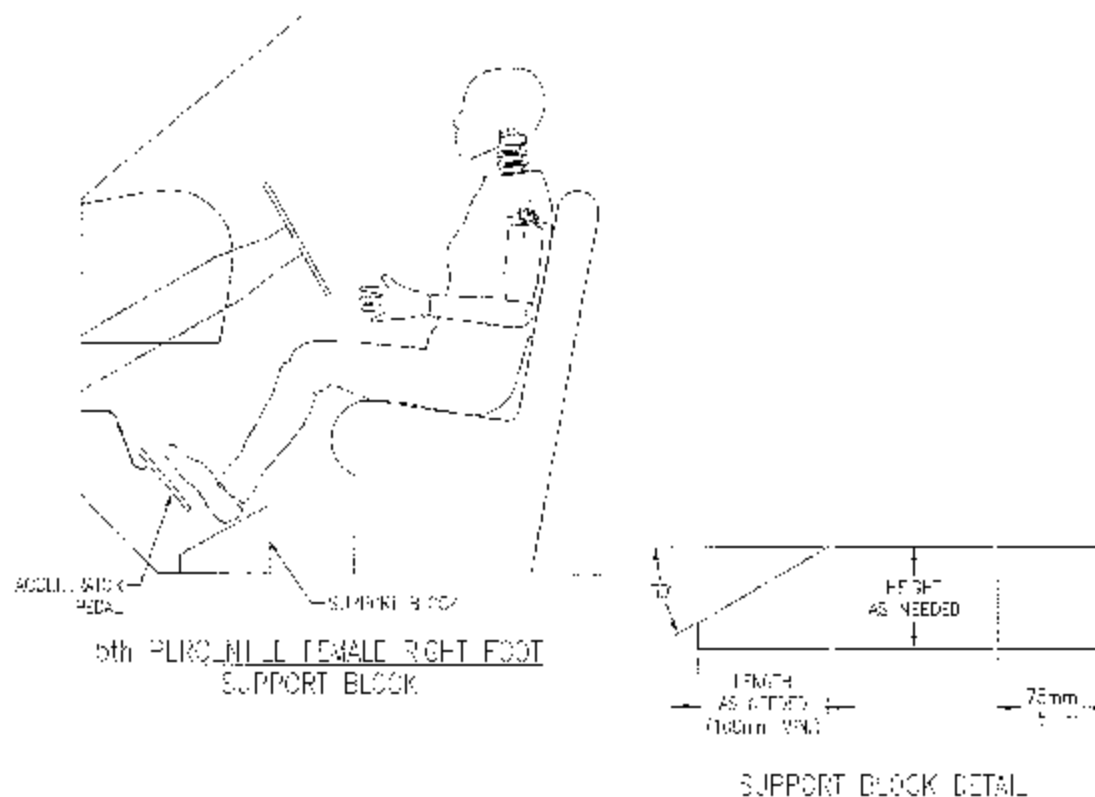


FIGURE G1

- \_\_\_\_ 2.29 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.29.5 shall be completed in all cases.
  - \_\_\_\_ 2.29.1 Extend the leg until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
  - \_\_\_\_ 2.29.2 If the vehicle has an adjustable accelerator pedal, move the pedal rearward until pedal contact occurs or the pedal reaches the full rearward position. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

- \_\_\_\_\_ 2.29.3 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- \_\_\_\_\_ 2.29.4 Align the centerline of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- \_\_\_\_\_ 2.29.5 Record foot position  
       \_\_\_\_\_ Pedal Contact achieved. Contact occurred at step \_\_\_\_\_.  
               \_\_\_\_\_ Heel set \_\_\_\_\_ mm from floor pan.  
       \_\_\_\_\_ Pedal Contact not achieved. Heel set \_\_\_\_\_ mm from the floor pan.
- X 2.30 Driver's foot positioning, left foot.
- X 2.30.1 Place the foot perpendicular to the leg and determine if the left heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.30.2 otherwise, position the leg as perpendicular to the thigh as possible with the foot parallel to the floor pan.
- X 2.30.2 Place the left foot on the toe board with the heel resting on the floor pan as close to the intersection of the floor pan and the toe board as possible. Adjust the angle of the foot if necessary to contact the toe board. If the foot will not contact the toe board, set the foot perpendicular to the leg, and set the heel on the floor pan as far forward as possible. Do not place the foot on the wheel well projection or footrest. If the pedals interfere with the placement of the foot, reposition the foot by rotating the foot about the leg, or rotate the leg outboard about the hip if necessary.  
       \_\_\_\_\_ Foot rotated about the leg  
       \_\_\_\_\_ Foot rotated about the leg, and the leg rotated about the hip.  
       X No pedal interference
- X 2.30.3 Record foot position.  
       \_\_\_\_\_ Heel does not contact floor pan.  
       \_\_\_\_\_ Foot placed on toe board.  
       X Foot placed on floor pan.
- X 2.31 Driver arm/hand positioning.
- X 2.31.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)
- X 2.31.2 Place the palms of the dummy in contact with the outer part of the steering wheel rim at its horizontal centerline with the thumbs over the steering wheel rim. (S16.3.2.3.2)
- X 2.31.3 If it is not possible to position the thumbs inside the steering wheel rim at its horizontal centerline, then position them above and as close to the horizontal centerline of the steering wheel rim as possible. (S16.3.2.3.3)
- X 2.31.4 Lightly tape the hands to the steering wheel rim so that if the hand of the test dummy is pushed upward by a force of not less than 9 N (2 lb) and not more than 22 N (5 lb), the tape releases the hand from the steering wheel rim. S16.3.2.3.4
- X 2.32 Adjustable head restraints
- \_\_\_\_\_ 2.32.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)  
       X N/A Vehicle does not contain automatic head restraints.
- X 2.32.2 Adjust each head restraint to its lowest position. (S16.3.4.2)
- X 2.32.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust each head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)  
       Vertical height of head restraint 205 mm  
       Mid-point height \_\_\_\_\_ mm
- X 2.32.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)  
       \_\_\_\_\_ N/A midpoint position attained in previous step  
       X Headrest set at nearest detent below the head CG

- X 2.32.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment
- X 2.33 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy). S16.3.5
- X 2.33.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.  
 Manufacturer's specified position Fixed  
 Actual Position Fixed \_\_\_\_\_
- X 2.33.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)
- X 2.33.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)
- X 2.33.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)

**DATA SHEET 30 - PASSENGER**  
**Seating Procedure 5<sup>th</sup> Percentile Female Passenger Dummy**  
**(Part 572, Subpart O) (S16.2- S16.3)**

NIHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle, B. Miller

Test Number: 021114

Seat Type:        Bench    ☒ Bucket    ☐ Split Bench

**1.0 Seat Positioning (S16.2.10)**

- ☒ 1.1. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)  
      ☒ N/A - No lumbar adjustment
- ☒ 1.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)  
      ☒ N/A - No additional support adjustment
- ☒ 1.3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)  
      ☐ N/A - No independent fore-aft seat cushion adjustment
- ☒ 1.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)  
      ☒ N/A - No independent seat cushion height adjustment.
- ☒ 1.5. If the seat is a bench seat, use the position determined for the driver's side and proceed to Section 2.0.  
      ☒ N/A - Seat is not a bench seat.
- ☒ 1.6. Put the seat in its full rearward position. (S16.2.10.3.1)  
      ☐ N/A - the seat does not have a fore-aft adjustment.
- ☒ 1.7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)  
      ☒ N/A - No seat height adjustment.
- ☒ 1.8. Draw a horizontal line on the side of the seat cushion.
- ☒ 1.9. Using only the controls which change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position rearward of the mid-point), and R for full rearward.  
      ☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 1.10. Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)  
      ☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 1.11. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)  
      ☒ N/A - No adjustments  
      Angle of the line on side of the seat cushion in the full forward position. 0.8 degrees
- ☒ 1.12. If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)

- X 1.13 Record the mid height position of S2. (S16.2.10.3.3)  
X N/A – No seat height adjustment  
 Max. height from S1 \_\_\_\_\_  
 Min. height from S1 \_\_\_\_\_  
 Test height from S1 \_\_\_\_\_  
 Angle of line on seat cushion at test height, \_\_\_\_\_ degrees
- \_\_\_\_ 1.14 Record the horizontal longitudinal distance between Point S1 and Point S2.  
 S1, S2 separation, \_\_\_\_\_

## 2.0 Dummy Positioning

**NOTE:** Certain steps may need to be performed simultaneously with the positioning of the driver side dummy.

- X 2.1. Is the seat a bucket seat? X Yes \_\_\_\_ No  
 If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.
- 2.1.1 Bucket seats:  
 Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.3.1.10)  
 The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.  
 Record the width of the seat cushion. 560 mm  
 Record the distance from the edge of the seat cushion to the vertical plane. 280 mm
- 2.1.2 Bench seats and split bench seats:  
 Mark a longitudinal vertical plane that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel. (S16.3.3.1.4)
- X 2.3 With the seat in the position from step 1.5 or 1.13, move the seat to the (full) rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.3.1.1)
- X 2.4 Fully recline the seat back. (S16.3.3.1.2)  
 \_\_\_\_ N/A seat back not adjustable.
- X 2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.3.1.2)
- X 2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.3.1.3 or S16.3.3.1.4)
- X 2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.3.1.5)
- X 2.8 Set the angle between the legs and the thighs to 120 degrees. (S16.3.3.1.6)
- X 2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm (6.3 to 6.7 inches). Center the knee separation with respect to the seat centerline. (S16.3.3.1.6)  
 Record Knee Separation 165 mm
- X 2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.3.1.6)  
 \_\_\_\_ Pelvis contacted seat back.  
X Calves contacted seat cushion.
- X 2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.3.1.7)
- \_\_\_\_ 2.12 If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.3.1.8)
- \_\_\_\_ 2.13 If the seat is a bench seat perform the driver dummy setup first and perform only the steps that do not affect the seat position or seat back angle of the driver as indicated. (S16.2.10.3)

- ☒ 2.14 Using only the controls that move the seat fore and aft, move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.3.1.8)
- ☐ N/A Bench Seat
- ☒ Full Forward reached
- ☐ Dummy contact. Clearance set at maximum of 5mm
- Measured Clearance \_\_\_\_\_ mm
- ☐ Dummy Contact. Seat set at nearest detent position.
- Seat position \_\_\_\_\_ detent positions rearward of full forward (full forward is position zero)
- ☒ 2.15 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level  $\pm 0.5$  degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9 and S16.3.3.1.10) (Check All That Apply)
- ☐ Seat back not adjustable
- ☐ Seat back not independent of driver side seat back
- ☒ Head Level Achieved. (Check all that apply)
- ☒ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle 0 degrees
- ☐ Head Level NOT Achieved. (Check all that apply)
- ☐ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle \_\_\_\_\_ degrees
- ☒ 2.16 Verify the pelvis is not interfering with the seat belt. (S16.3.3.1.9)
- ☒ 2.17 Verify the dummy abdomen is properly installed. (S16.3.3.1.9)
- ☒ 2.18 Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees  $\pm 2.5$  degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference. (S16.3.3.1.11)
- ☒ Pelvic angle set to 20.0 degrees  $\pm 2.5$  degrees.
- ☐ Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.
- ☒ Record the pelvic angle. 21.3 degrees
- ☒ 2.19 Verify the transverse instrument platform of the dummy head is level  $\pm 0.5$  degrees. Use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9, S16.3.3.1.10, and S16.3.3.1.11)
- ☒ Head Level Achieved
- Head Angle 0 degrees
- ☐ Head Level NOT Achieved.
- Head Angle \_\_\_\_\_ degrees
- ☒ 2.20 Check the dummy for contact with interior after completing adjustments. (S16.3.3.1.12)
- ☐ N/A Bench Seat
- ☒ No contact.
- ☐ Dummy in contact with interior.
- Seat moved aft \_\_\_\_\_ mm from previous position.
- Seat moved aft \_\_\_\_\_ detent positions from the previous position.
- ☒ 2.21 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward. (S16.3.3.1.12)
- ☐ N/A Bench Seat
- ☒ N/A Seat already at full forward position.
- ☐ Clearance unchanged. No adjustments required.
- ☐ Additional clearance available
- Seat moved Forward \_\_\_\_\_ mm from the previous position.
- Seat moved Forward \_\_\_\_\_ detent positions from the previous position.
- Seat moved Forward. Full Forward position reached.

- X 2.22 Passenger foot positioning. (Indicate final position achieved) (S16.3.3.2)
- \_\_\_\_\_ 2.22.1 Place feet flat on the toe board. OR
- X 2.22.2 If the feet cannot be placed flat on the toe board, set the feet perpendicular to the lower leg, and rest the heel as far forward on the floor pan as possible. OR
- \_\_\_\_\_ 2.22.3 If the heels do not touch the floor pan, set the legs to vertical and set the feet parallel to the floor pan
- X 2.23 Passenger arm/hand positioning. (S16.3.3.3)
- X 2.23.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.3.3.1)
- X 2.23.2 Place the palms of the dummy in contact with the outer part of the thighs (S16.3.3.3.2)
- X 2.23.3 Place the little fingers in contact with the seat cushion. (S16.3.3.3.3)
- X 2.24 Adjustable head restraints
- \_\_\_\_\_ 2.24.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)
- X N/A Vehicle does not contain automatic head restraints.
- X 2.24.2 Adjust the head restraint to its lowest position. (S16.3.4.2)
- X 2.24.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust the head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)
- Vertical height of head restraint 203 mm
- Mid-point height 101.5 mm
- X 2.24.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)
- \_\_\_\_\_ N/A midpoint position attained in previous step
- X Head rest set at nearest detent below the head CG Full Down
- X 2.24.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment
- X 2.25 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy) S16.3.5
- X 2.25.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.
- Manufacturer's specified position Fixed
- Actual Position Fixed
- X 2.25.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)
- X 2.25.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)
- X 2.25.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)

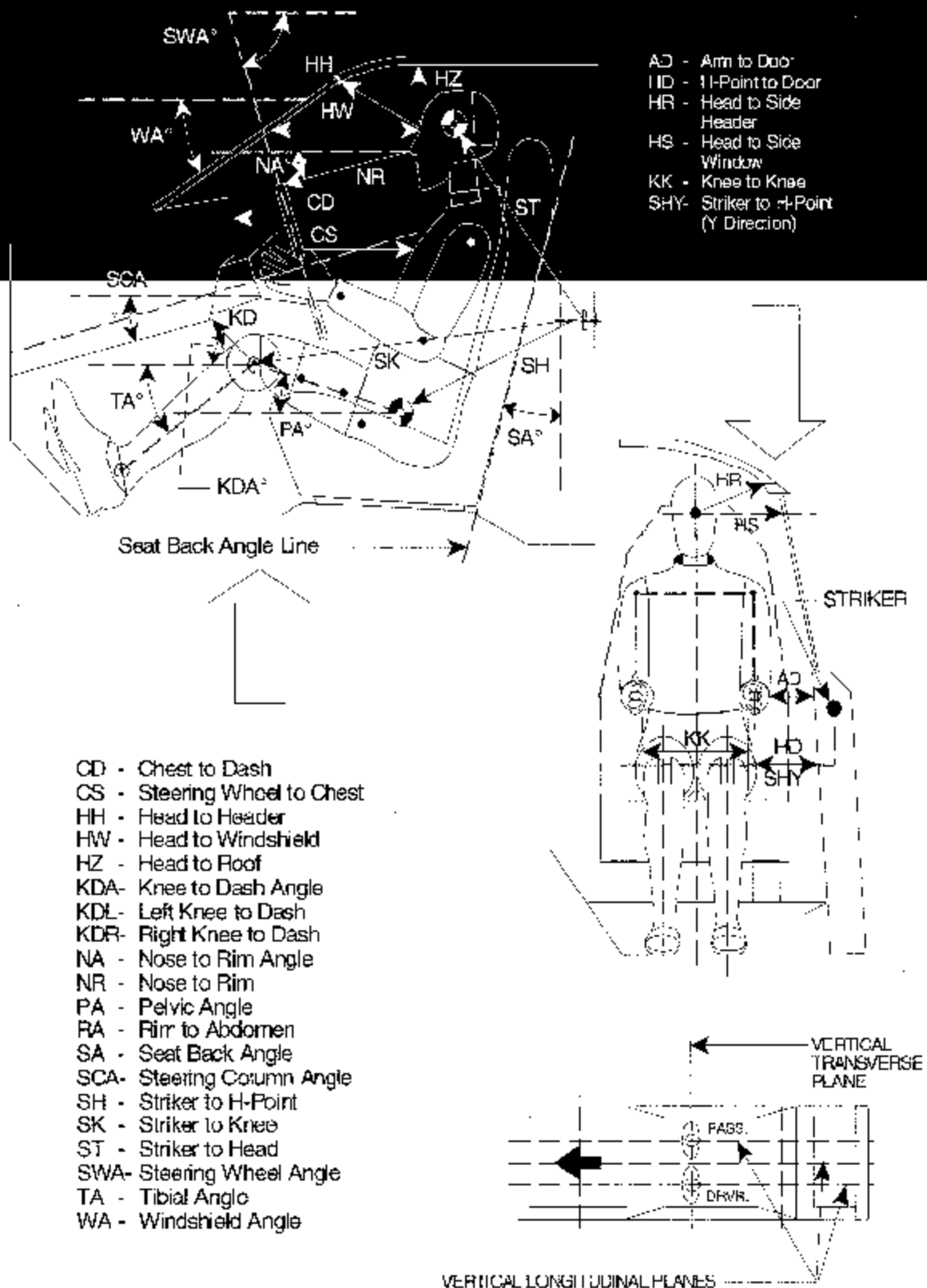


**DATA SHEET 31**  
**DUMMY POSITIONING MEASUREMENTS**

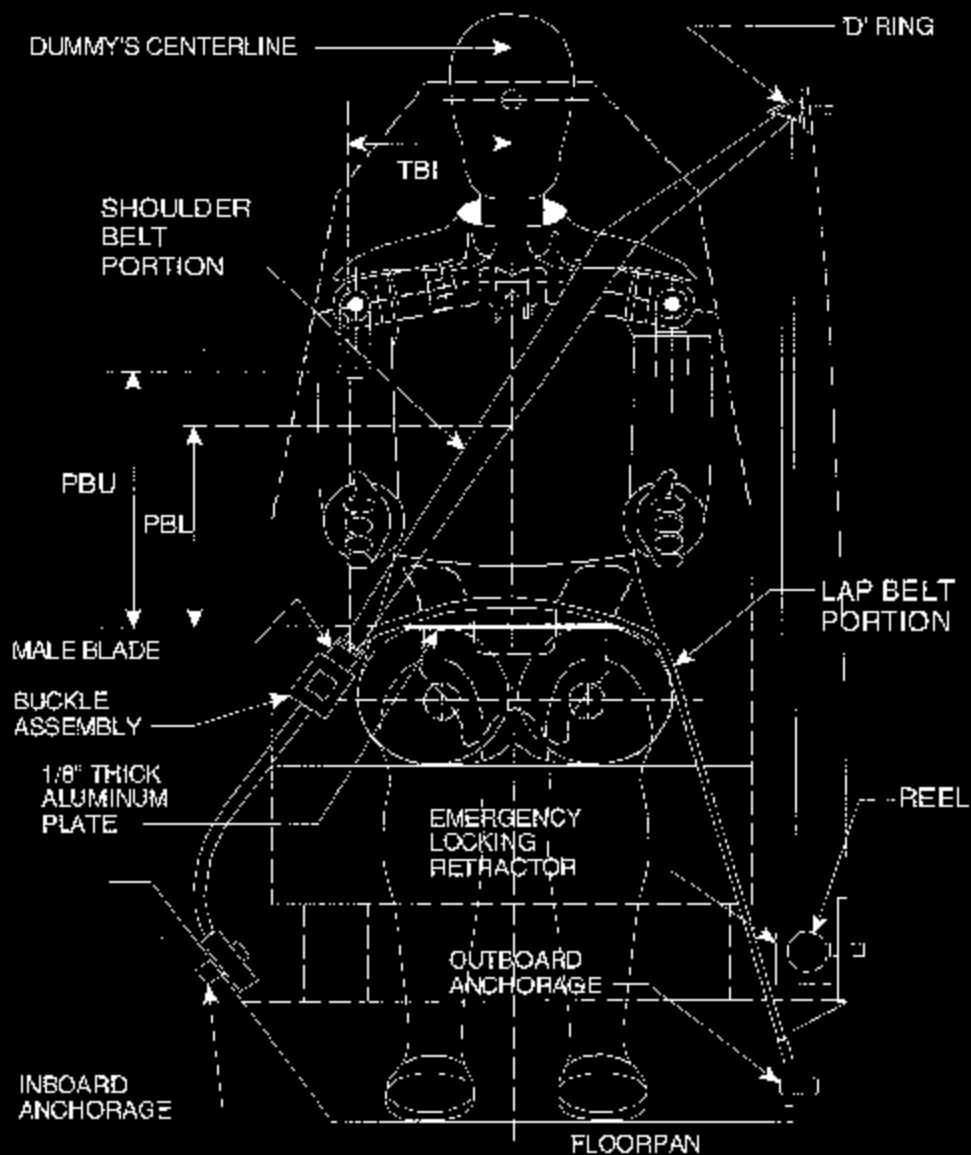
	DRIVER (Serial No. 421 )	PASSENGER (Serial No. 426 )
WA <sup>1</sup>	40.0	
SWA <sup>0</sup>	21.1	NA
SCA <sup>0</sup>	68.9	NA
SA <sup>1</sup>	9.7 <sup>1</sup>	10.4 <sup>1</sup>
HZ	335	345
HH	413	449
HW	671	663
HR	310	300
NR	265 ANGLE 4.0°	NA
CD	475	389
CS	230	NA
RA	99	NA
KDL	95 Angle 61.9°	85 Angle 66.1°
KDR	98	88
PA <sup>0</sup>	21.6	21.3
TA <sup>0</sup>	53.9	61.0
KK	230	165
ST	637 ANGLE -55.3°	625 ANGLE -56.6°
SK	800 ANGLE 1.2°	800 ANGLE -0.1°
SH	470 ANGLE 8.5°	466 ANGLE 11.2°
SHY	245	270
HS	301	275
HD	190	201
AD	175	102

<sup>1</sup> Measured on head restraint post.

# DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



## SEAT BELT POSITIONING DATA



**FRONT VIEW OF DUMMY**

## DESCRIPTIONS OF DUMMY MEASUREMENTS

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

- \* HH      Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- \* HW      Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ      Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- \* CS      Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- \* CD      Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See photograph.
- RA      Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR      Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).
- \*<sup>1</sup> KDL, KDR      Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See photograph.
- SH, SK, ST      Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the

\* Measurement used in Data Tape Reference Guide

<sup>1</sup> Only outboard measurement is referenced in Data Tape Reference Guide

horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See photograph.

The following measurements are to be made within a vertical transverse plane.

- HS Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height that allows a level measurement. Use a level. See photograph.
- \* AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a STD is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.
- \* HD H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.
- \* HR Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.
- SHY Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See photograph.
- KK Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse)

#### ANGLES

- SA Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.<sup>2</sup>
- PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the STD or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
- SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

\* Measurement used in Data Tape Reference Guide

<sup>1</sup> Only outboard measurement is referenced in Data Tape Reference Guide

<sup>2</sup> For this test, the measurement was taken on head restraint post per COTR.

SCA	Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
NA	Measure the angle made when taking the measurement NR with respect to the horizontal.
KDA	Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph.
WA	Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
TA	Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

# **DATA SHEET 32** **CRASH TEST**

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle, B. Miller

Impact Angle: 0° Belled Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 48 km/h      0 to 56 km/h

Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

- X 1. Vehicle underbody painted
- X 2. The speed measuring devices are in place and functioning.
- X 3. The speed measuring devices are 1.5 m from the barrier (spec. 1.5m) and 30 cm from the barrier (spec. is 30 cm)
- X 4. Convertible top is in the closed position.  
X N/A – Not a convertible
- X 5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected.
- X 6. Tires inflated to pressure on tire placard or if it does not have a tire placard because it is not a passenger car, then inflated to the tire pressure specified in the owner information.  
241 kPa front left tire 240 kPa specified on tire placard or in owner information  
241 kPa front right tire 240 kPa specified on tire placard or in owner information  
241 kPa rear left tire 240 kPa specified on tire placard or in owner information  
241 kPa rear right tire 240 kPa specified on tire placard or in owner information
- X 7. Time zero markers and switches in-place.
- X 8. Pre test zero and shunt calibration adjustments performed and recorded
- X 9. Dummy temperature meets requirements of section 12.2 of the test procedure.
- X 10. Vehicle hood closed and latched
- X 11. Transmission placed in neutral
- X 12. Parking brake off
- X 13. Ignition in the ON position
- X 14. Doors closed and latched but not locked.
- X 15. Posttest zero and shunt calibration checks performed and recorded
- X 16. Actual test speed 40.0 km/h
- X 17. Vehicle rebound from the barrier NA cm
- X 18. Describe whether the doors open after the test and what method is used to open the doors.  
Left front door Easy  
Right front door Easy  
Left rear door Easy  
Right rear door Easy
- X 19. Describe the contact points of the dummy with the interior of the vehicle.  
Driver dummy Head contacted steering wheel and head restraint. Abdomen contacted steering wheel. Both knees contacted knee bolster.  
Passenger dummy Head contacted grab handle on instrument panel and head restraint. Both knees contacted the glove box.

**DATA SHEET 33**  
**Offset Deformable Barrier Test Using Belted 5<sup>th</sup> Percentile Female Dummies**  
**(Part 572, Subpart O) (S18)**

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle

Test Number: 021114 Barrier Serial Number: 053A0402/098B0502

Driver Dummy Serial Number: 421 Passenger Dummy Serial Number: 426

Vehicle Speed X 40 km/h Offset 40 Percent

**1.0 Pre-Test Activities**

- X 1.1 Complete the following data sheets
- X 1.1.1 Vehicle Receiving and Inspection
  - X 1.1.2 Vehicle Weight, Fuel Tank, and Altitude
  - X 1.1.3 Vehicle Accelerometer Location
  - X 1.1.4 General Test Vehicle Data
  - X 1.1.5 Photographic Targets
  - X 1.1.6 Camera Locations
  - X 1.1.7 5th Percentile Female Dummy Calibration
  - X 1.1.8 Appendix G 5th Percentile Female Dummy Seating and Positioning Procedure

- X 1.2 Barrier Certification
- X 1.2.1 Verify the offset deformable barrier materials and construction are certified to Subpart C of 49 CFR 587. (Attach vendor certification sheets to this data sheet.)

- X 1.3 Verify barrier measurements and complete the table below. (See Figure 1)

	Specified Dimension in mm +/- 2.5 unless specified	Measured Dimension in mm
Main Body Height RH Side	650	650
Main Body Height LH Side	650	651
Floor to Lower Barrier LH	200 +/- 15	200
Floor to Lower Barrier RH	200 +/- 15	203
Main Body Width	1000	999
Bumper Element Width	1000	1000
Bumper Element Height LH	330	329
Bumper Element Height RH	330	330
Main Body Depth LH	450	451
Main Body Depth RH	450	450
Bumper Element Depth LH	90	90
Bumper Element Depth RH	90	91
Upper Slot Location	220	221
Lower Slot Location	110	108
Upper Slot Width	4mm Max	3
Lower Slot Width	4mm Max	2

- X 1.3.1 All Dimensions within specified tolerance
- X Yes





- ☒ Post test fuel filler cap view
- ☒ Post test front underbody view
- ☒ Post test rear underbody view
- ☒ Post test driver dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat.
- ☒ Frontal post test driver dummy position with the camera in the same plane as the longitudinal centerline of the dummy.
- ☒ Post test passenger dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat
- ☒ Frontal post test passenger dummy position view with the camera in the same plane as the longitudinal centerline of the dummy.
- ☒ Dummy contact point(s) (vehicle and dummy)
- ☒ Post test view of the knee bolsters.
- ☐ Post test view of the steering column shear capsule if any part of it is visible. Do NOT disassemble any parts to take these photographs.
- ☒ Post test under hood view of the steering column intersecting the fire wall. Take the best photograph possible without removing any parts.
- ☒ Post test view of the steering column intersecting the fire wall from inside the vehicle. Take the best photograph possible without removing any parts.
- ☐ Post test Stoddard solvent spillage location view, if required.
- ☐ Post test electrolyte spillage location view, if required.
- ☒ Post test top view of test vehicle while vehicle is on static rollover machine. (If applicable)
- ☒ 3.2 Process data channels per section 11.14 and record injury values in the Table.

	<b>FMVSS 208 Maximum Allowable Injury Assessment Value</b>	<b>Measured Value Driver Dummy Serial No. 421</b>	<b>Measured Value Passenger Dummy Serial No. 426</b>
HIC <sub>15</sub>	700	262	290
Chest Acceleration	60 g	20.2 g	22.8 g
Chest Displacement	52 mm	20 mm	13 mm
Peak Nij (Nte)	1.0	0.40	0.35
Time (ms)	NA	125.76 ms	121.68 ms
Peak Nij (Ntf)	1.0	0.08	0.28
Time (ms)	NA	147.20 ms	147.92 ms
Peak Nij (Nee)	1.0	0.02	0.03
Time (ms)	NA	43.36 ms	58.80 ms
Peak Nij (Nef)	1.0	0.10	0.28
Time (ms)	NA	200.16 ms	150.48 ms
Neck Tension (Fz)	2620 N	782 N	1059 N
Neck Compression (Fz)	2520 N	140 N	55 N
Left Femur Compression	6805 N	3320 N	1398 N
Right Femur Compression	6805 N	1241 N	1244 N

All injury Criteria within limits

- ☒ Pass
- ☐ Fail

- ☒ 3.3 Perform post-test calibration check.

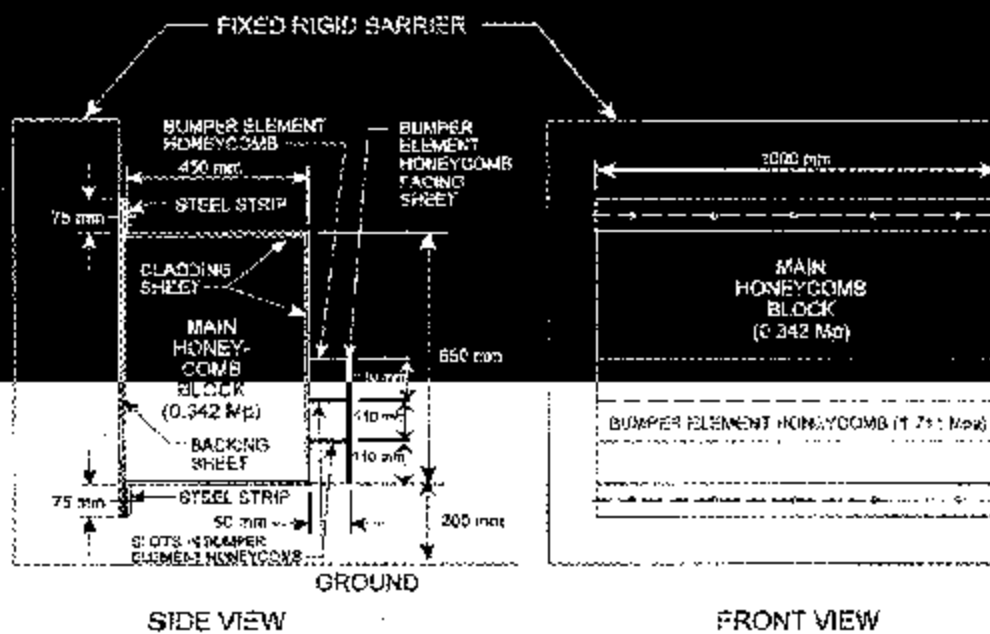


FIGURE 1  
OFFSET BARRIER



**OFFSET FRONTAL BARRIER CERTIFICATION**

Date: October 31, 2002  
To: Transportation Research  
Ship & Rec Bldg 50  
10820 St. Route 347  
East Liberty, OH 43319-0367

**PURCHASE ORDER INFORMATION**

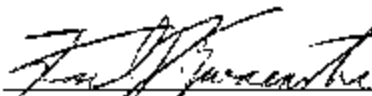
Customer P.O. Number: VERBAL  
Work Order Number: 14853  
Quantity: 01 piece

**CORE INFORMATION**

Core Type: PCGA-1.8-3/4-P-3003-T  
Cell Size: 0.750 inches  
Density: 1.8 pcf

Unit Number: 098B0502

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 49.59 psi  $\pm 0, \pm 10\%$  per DWG #WG11.

  
Quality Control Representative  
Karl D. Zwaanstra



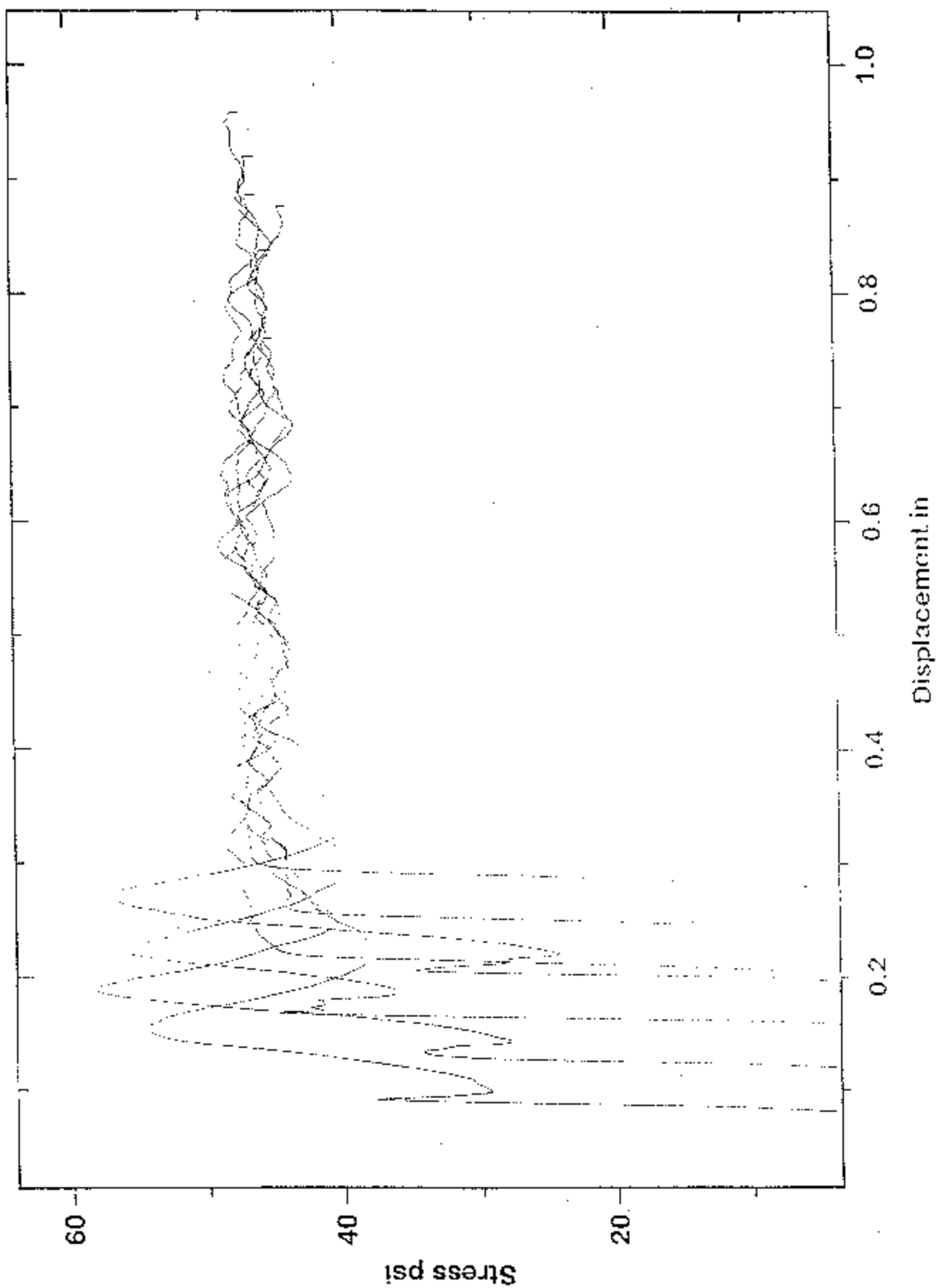


## Crush Data

49.59 psi +0, -10% psi per DWG #WG11

**Block Number:** 098B0502

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	45.28	45.24	45.69
2	45.08	47.31	47.26
3	45.00	46.16	47.63
4	45.03	45.79	46.73
5	47.14	46.94	45.42
6	46.56	45.58	45.50
7	46.04	46.08	46.10



**OFFSET FRONTAL BARRIER CERTIFICATION**

Date: October 31, 2002

To: Transportation Research  
Ship & Rec Bldg 50  
10820 St. Route 347  
East Liberty, OH 43319-0367

**PURCHASE ORDER INFORMATION**

Customer P.O. Number: VERBAL  
Work Order Number: 14853  
Quantity: 01 piece

**CORE INFORMATION**

Core Type: PCGA-1/4-5.2-P-3003-T  
Measured Cell Size: 0.250 inches  
Measured Density: 5.2 pcf

Unit Number: 053A0402

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 248.1 psi  $\pm 10$ , -10% psi per DWG #WG11.

  
Quality Control Representative  
Karl D. Zwaanstra





## Crush Data

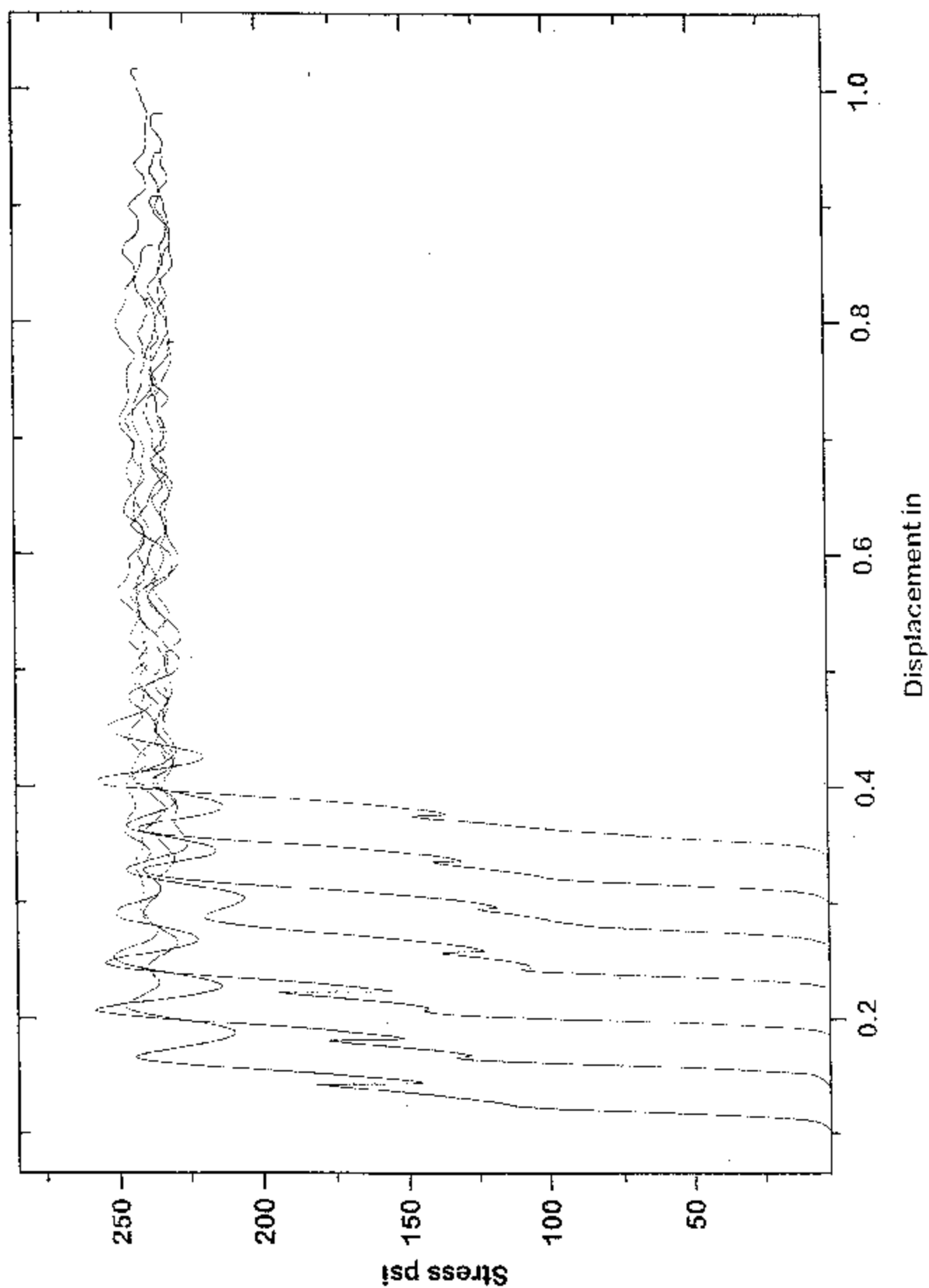
248.1 psi +0, -10% psi per DWG #WG11

**Block Number: 053A0402**

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	234.32	234.34	233.15
2	240.03	241.88	241.78
3	241.42	241.30	239.35
4	232.07	233.20	233.82
5	238.06	236.19	233.80
6	235.70	233.91	233.08
7	244.58	245.55	241.24



BLOCK # 053A0402 Sample ID: IN224182



**DATA SHEET 34**  
**ACCIDENT INVESTIGATION MEASUREMENTS**

NHTSA No.: C30104 Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, K. Watkins, S. Sterling

Impact Angle: 0° Belted Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

Vehicle Year/Make/Model/Body Style: 2003/Chevrolet/Suburban/MPV

VIN: 3GNEC16Z53G108730

Wheelbase: 3300 ; Build Date: 08/02

Veh. Size Category: MPV ; Test Weight: 2684.3

Front Overhang: 926 ; Overall Width: 1994

Veh. Impact Speed: 40.0 ; Vel. Change:\* 49.8

Collision Deformation Classification (CDC) Code: 12FYEW2

\* From integration of Left Rear Seat Crossmember X-axis acceleration.

Impact Mode: 40% Offset

Crush Depth Dimensions:

C1 = 450 mm

C2 = 374 mm

C3 = 419 mm

C4 = 189 mm

C5 = -29 mm

C6 = -191 mm

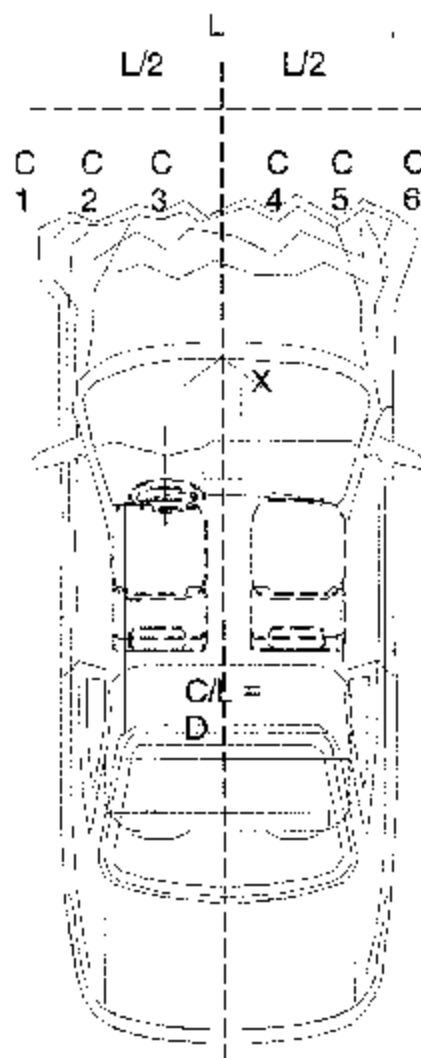
Midpoint of Damage: D= -599

(Left from Vehicle Longitudinal Centerline)

Length of Damage Region:

L = 1830 mm

REMARKS:



# **DATA SHEET 35** **WINDSHIELD MOUNTING (FMVSS 212)**

NHTSA No.: C30104

Test Date: 11/12-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benayides, M. Postle

Impact Angle: 0° Belted Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

Most vehicle windshields are either bonded in place and covered with chrome or plastic strips or they are held to the body by a rubber retainer. It is difficult to determine the exact periphery of the windshield because the glazing edge is hidden from view. The test engineer will measure the perimeter inside the retainer or molding at several locations. After the impact test the covering over the glazing edge may be removed for exact measurement of the windshield periphery. Do not disturb the molding or retainer in the event of a noncompliance.

- X 1. Describe from visual inspection how the windshield is mounted and describe any trim material.

Plastic trim all around the windshield, held by adhesive

- X 2. Mark the longitudinal centerline of the windshield.

- X 3. Measure pre-crash A, B, and C for the left side and record in the chart below.

- X 4. Measure pre-crash D, E, and F for the right side and record in the chart below.

- X 5. Measure from the edge of the retainer or molding to the edge of the windshield.

Dimension G: 18 mm

- X 6. Can a single thickness of copier type paper (as small a piece as necessary) slide between the windshield and the vehicle body?

X No, Pass - Skip to the table, complete it by repeating the pre-crash measurements in the post-crash column, and calculate the retention percentage which will be 100%.

     Yes, go to 7.

7. Visibly mark the beginning and end of the portions of the periphery where the paper slides between the windshield and the vehicle body.

8. Measure and record post-crash A, B, C, D, E, and F such that the measurements do not include any of the parts of the windshield where the paper slides between the windshield and the vehicle body.

9. Calculate and record the percent retention for the right and left side of the windshield.

10. Is total right side percent retention less than 75%?

     Yes, **FAIL**

     No, Pass

11. Is total left side percent retention less than 75%?

     Yes, **FAIL**

     No, Pass

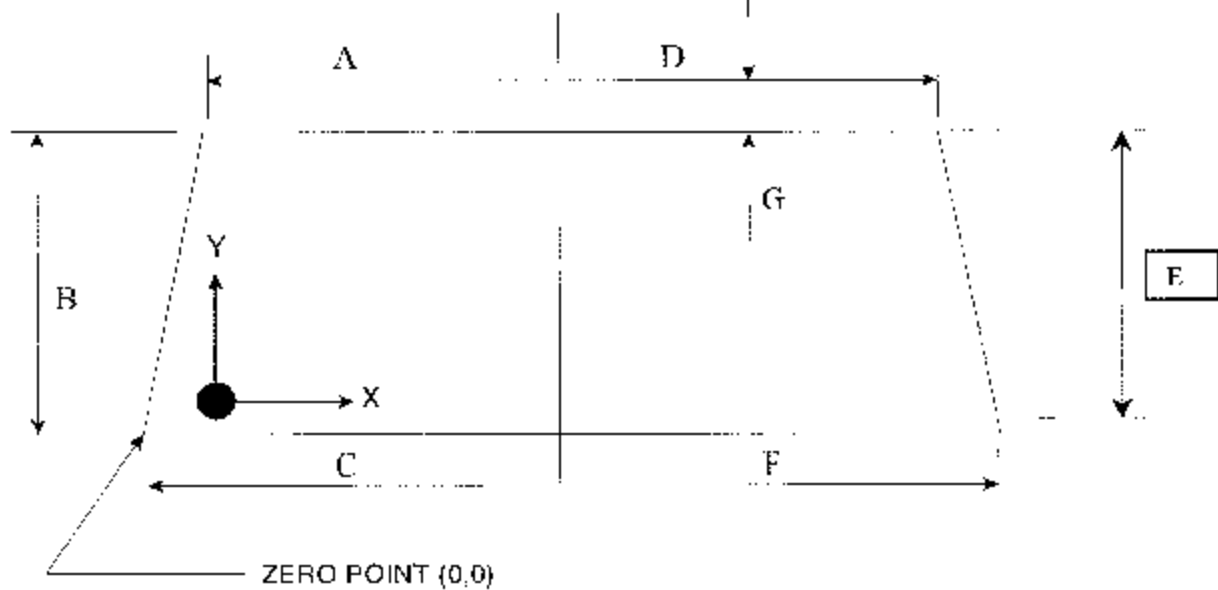
### WINDSHIELD PERIPHERY MEASUREMENT

	Dimension	Pre-crash mm	Post-crash mm	Percent Retention (Post-crash ÷ Pre-crash)
Left side	A	698	698	
	B	670	670	
	C	876	876	
	Total	2244	2244	
Right side	D	698	698	
	E	670	670	
	F	876	876	
	Total	2244	2244	

Indicate area of mounting failure: None

### FRONT VIEW OF WINDSHIELD

INDICATE WIDTH OF MOLDING



**DATA SHEET 36**  
**WINDSHIELD ZONE INTRUSION (FMVSS 219)**

NHTSA No.: C30104

Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): B. Miller, D. Summers, M. Postle

Impact Angle: 0° Belted Dummies: X Yes      No

Test Speed:      32 to 40 km/h X 0 to 40 km/h      0 to 48 km/h      0 to 56 km/h

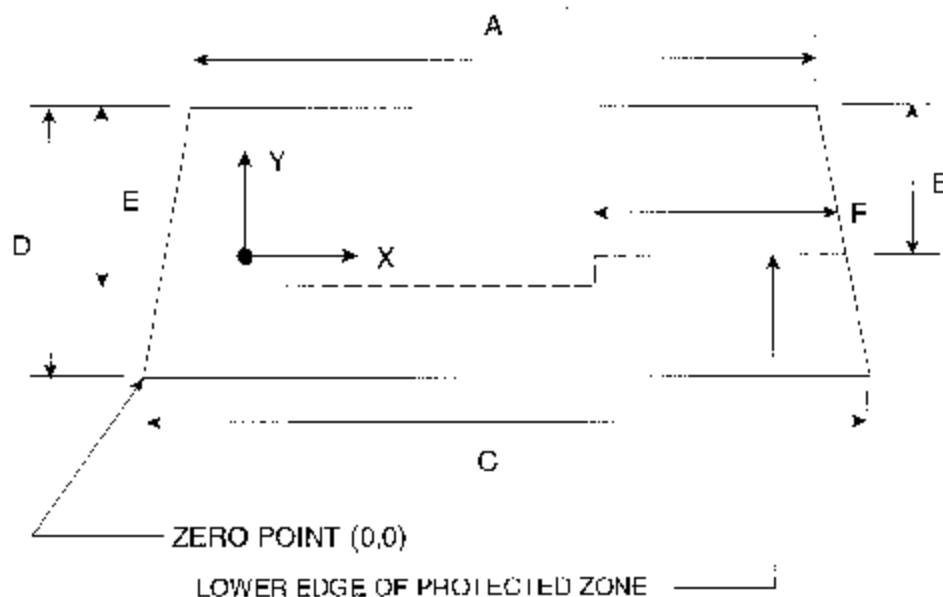
Driver Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male Passenger Dummy: X 5<sup>th</sup> female      50<sup>th</sup> male

- X 1. Place a 165 mm diameter rigid sphere, with a mass of 6.8 kg on the instrument panel so that it is simultaneously touching the instrument panel and the windshield. (571.219 S6.1(a))
- X 2. Roll the sphere from one side of the windshield to the other while marking on the windshield where the sphere contacts the windshield. (571.219 S6.1(b))
- X 3. From the outermost contactable points on the windshield draw a horizontal line to the edges of the windshield. (571.219 S6.1(h))
- X 4. Draw a line on the inner surface of the windshield that is 13 mm below the line determined in items 2 and 3.
- X 5. After the crash test, record any points where a part of the exterior of the vehicle has marked, penetrated, or broken the windshield.

**SKETCH OF FRONT VIEW OF WINDSHIELD:**

Provide all dimensions necessary to reproduce the protected area.

**FRONT VIEW OF WINDSHIELD**



**A. Windshield Dimensions**

A	B	C	D	E	F
1397	360	1753	670	485	935

AREA OF PROTECTED ZONE FAILURES:

- B. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one which is normally in contact with the windshield.

X	Y

- C. Provide coordinates of the area beneath the protected zone template that the inner surface of the windshield was penetrated by a vehicle component

X	Y

REMARKS: No penetration in or beneath the protected zone.

**DATA SHEET 37**  
**FUEL SYSTEM INTEGRITY (FMVSS 301)**

TEST VEHICLE NHTSA NO.: C30104 ; TEST DATE: 11/14/02

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: M. Postle

TYPE OF IMPACT: 40 % Offset

**STODDARD SOLVENT SPILLAGE MEASUREMENT:**

A. From impact until vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 28 grams)

B. For 5 minute period after vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 142 grams)

C. For next 25 minutes —

Actual = 0 grams. (Maximum Allowable = 28 grams/minute)

D. Provide Spillage Details: None

REMARKS: Test time to start of rollover was 57 minutes; no spillage occurred during the interval.



# FMVSS 301 STATIC ROLLOVER DATA SHEET

## A. TEST PHASE = 0° TO 90°

Determination of Stoddard  
Solvent Collection Time Period:

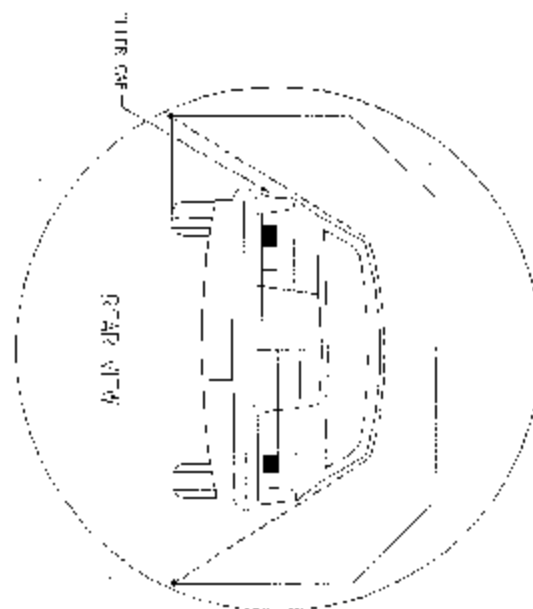
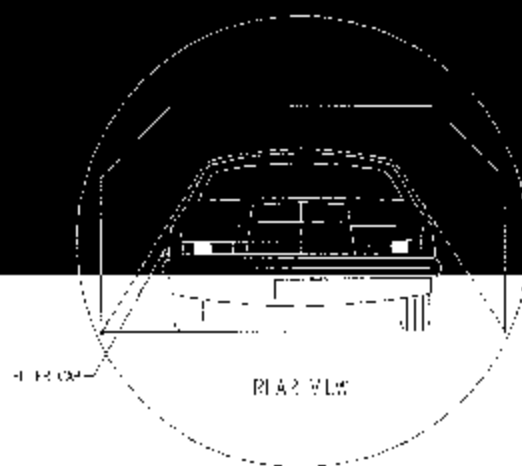
1. Rollover Fixture 90° Rotation Time =  
1 minutes, 30 seconds

(Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Held  
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =  
7 minutes

Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of  
rotation = 0 grams  
(142 grams allowed)
2. 6th minute = 0 grams  
(28 grams allowed)
3. 7th minute = 0 grams  
(28 grams allowed)
4. 8th minute (if required) = NA grams  
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

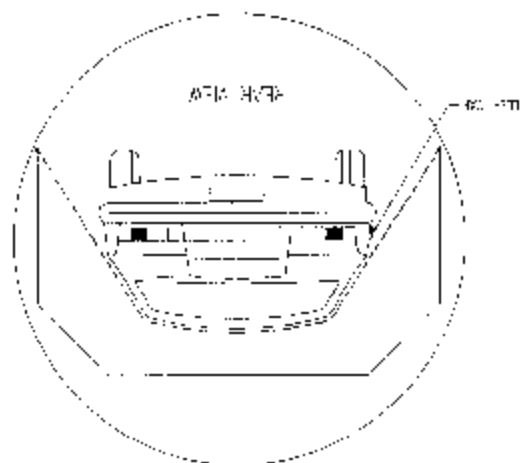
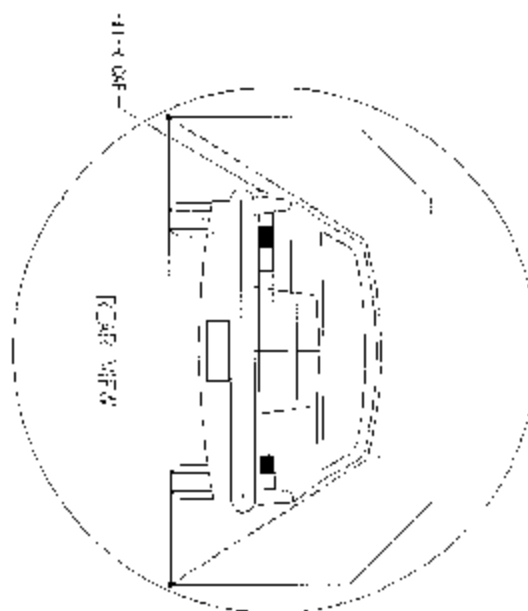
B. TEST PHASE – 90° TO 180°

Determination of Stoddard  
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =  
1 minutes, 30 seconds  
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold  
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL –  
7 minutes

Actual Test Vehicle Stoddard  
Solvent Spillage:

1. First 5 minutes from onset of  
rotation = 0 grams  
(142 grams allowed)
2. 6th minute = 0 grams  
(28 grams allowed)
3. 7th minute = 0 grams  
(28 grams allowed)
4. 8th minute (if required) – NA grams  
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

C. TEST PHASE = 180° TO 270°

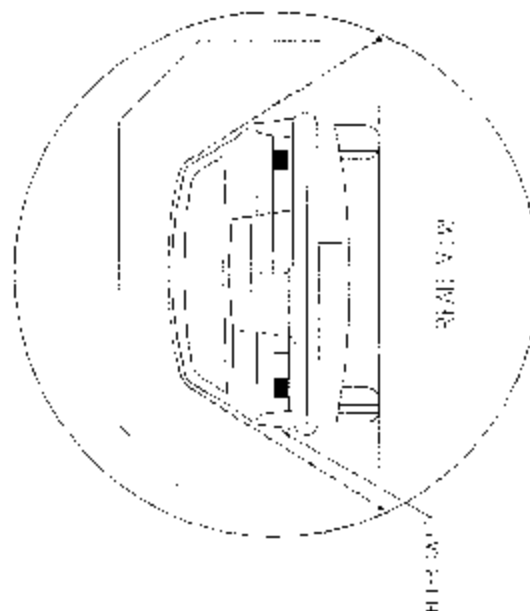
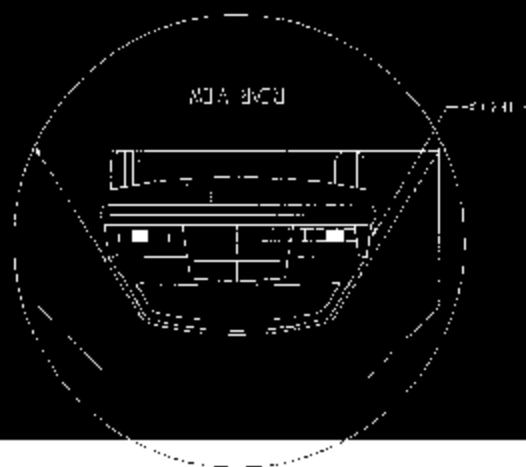
Determination of Stoddard  
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =  
1 minutes, 30 seconds  
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold  
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL -  
7 minutes

Actual Test Vehicle Stoddard  
Solvent Spillage:

1. First 5 minutes from onset of  
rotation = 0 grams  
(142 grams allowed)
2. 6th minute = 0 grams  
(28 grams allowed)
3. 7th minute = 0 grams  
(28 grams allowed)
4. 8th minute (if required) = NA grams  
(28 grams allowed)

Provide Details of Stoddard Solvent Spillage Locations - None



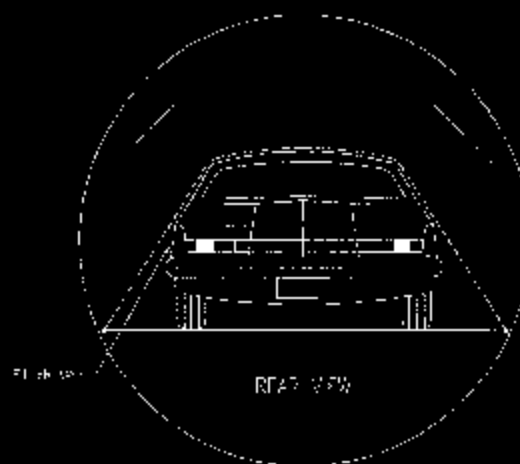
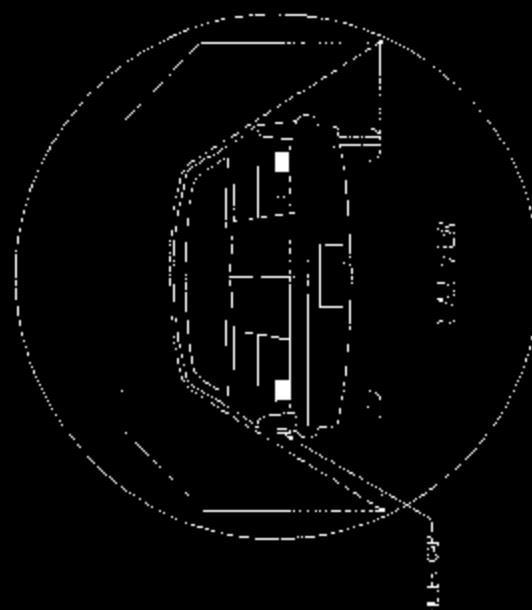
D. TEST PHASE = 270° TO 360°

Determination of Stoddard  
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =  
1 minutes, 30 seconds  
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold  
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =  
7 minutes

Actual Test Vehicle Stoddard  
Solvent Spillage:

1. First 5 minutes from onset of  
rotation = 0 grams  
(142 grams allowed)
2. 6th minute = 0 grams  
(28 grams allowed)
3. 7th minute = 0 grams  
(28 grams allowed)
4. 8th minute (if required) = NA grams  
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

## Section 6

### Test Data

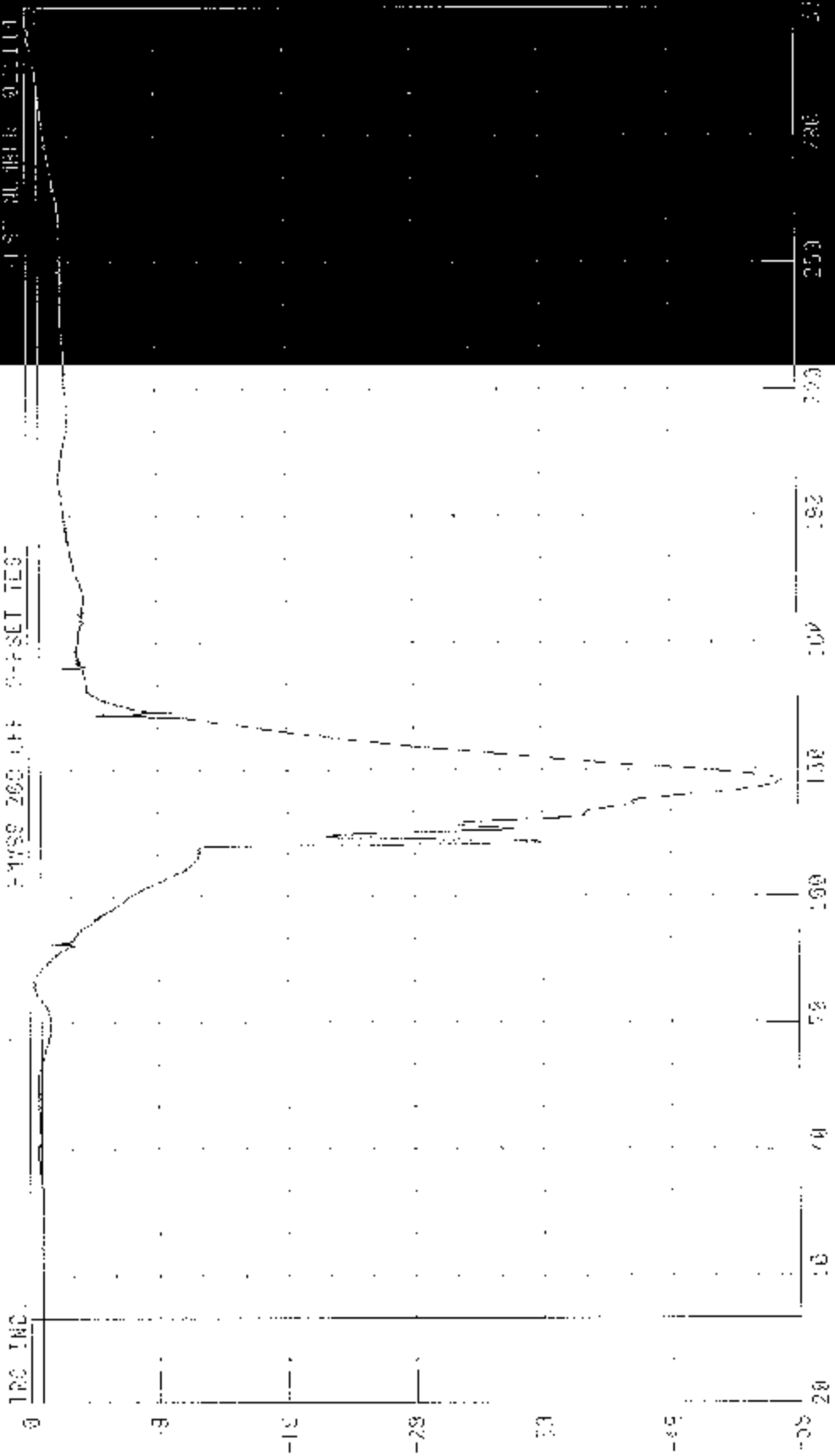
3-7

NAME: \_\_\_\_\_ CLINICAL: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

231

—571 1383— 41 097 6846—

Elisabeth Kübler-Ross


$$\frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$$

PEER REVIEW: 5774, 3, 127, 52, 13

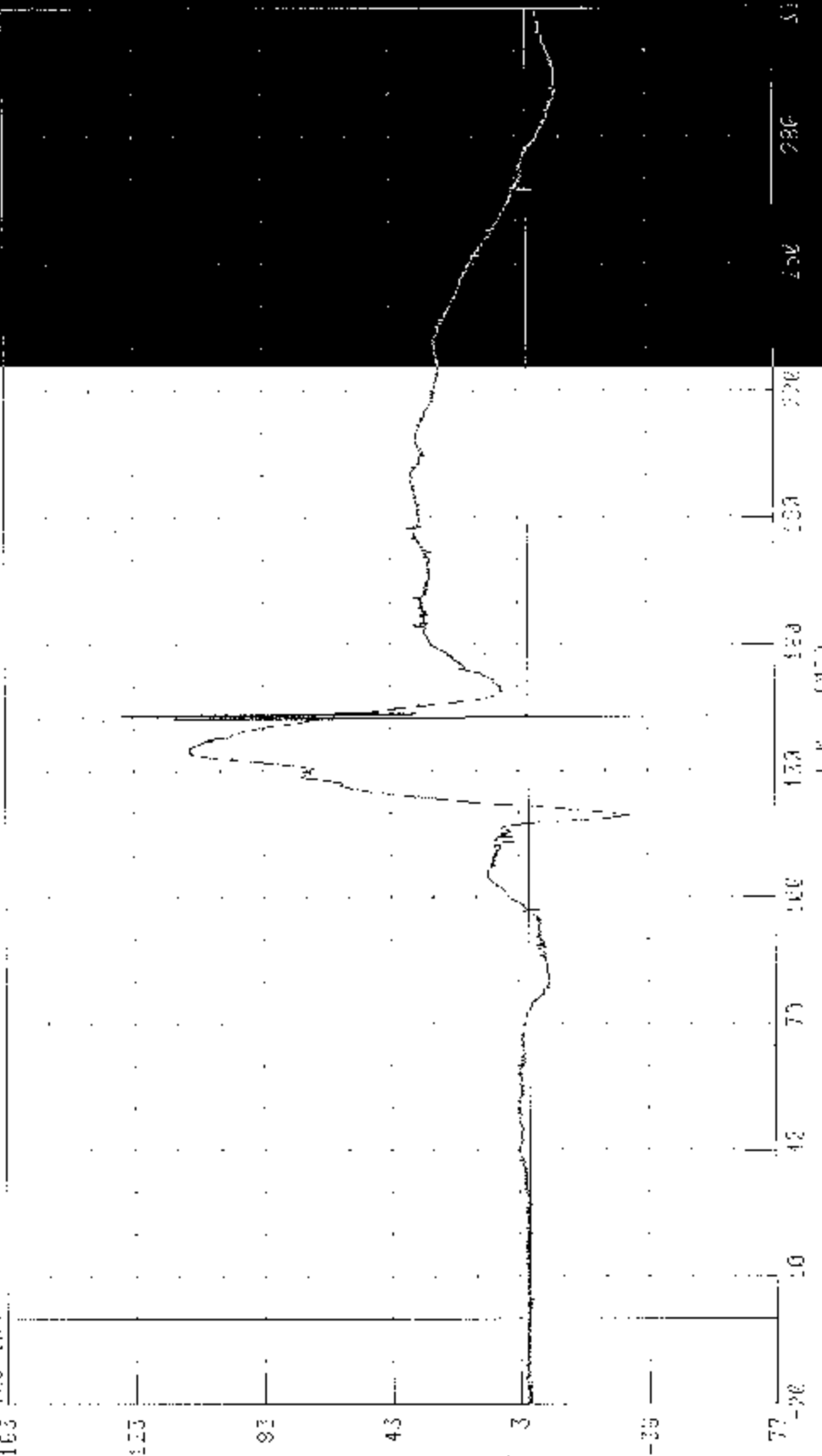
030124 / 2002 ORLANDO -1 SUBURBAN 1500 750

DRIVE / IEPD / DATE / TIME / LOCATION

PHYSS 200 LEFT GR-SPT 125

TRC INC

TEST NUMBER VALUES



CLARK / IEPD / FILTER: ON / CLASS: 1000

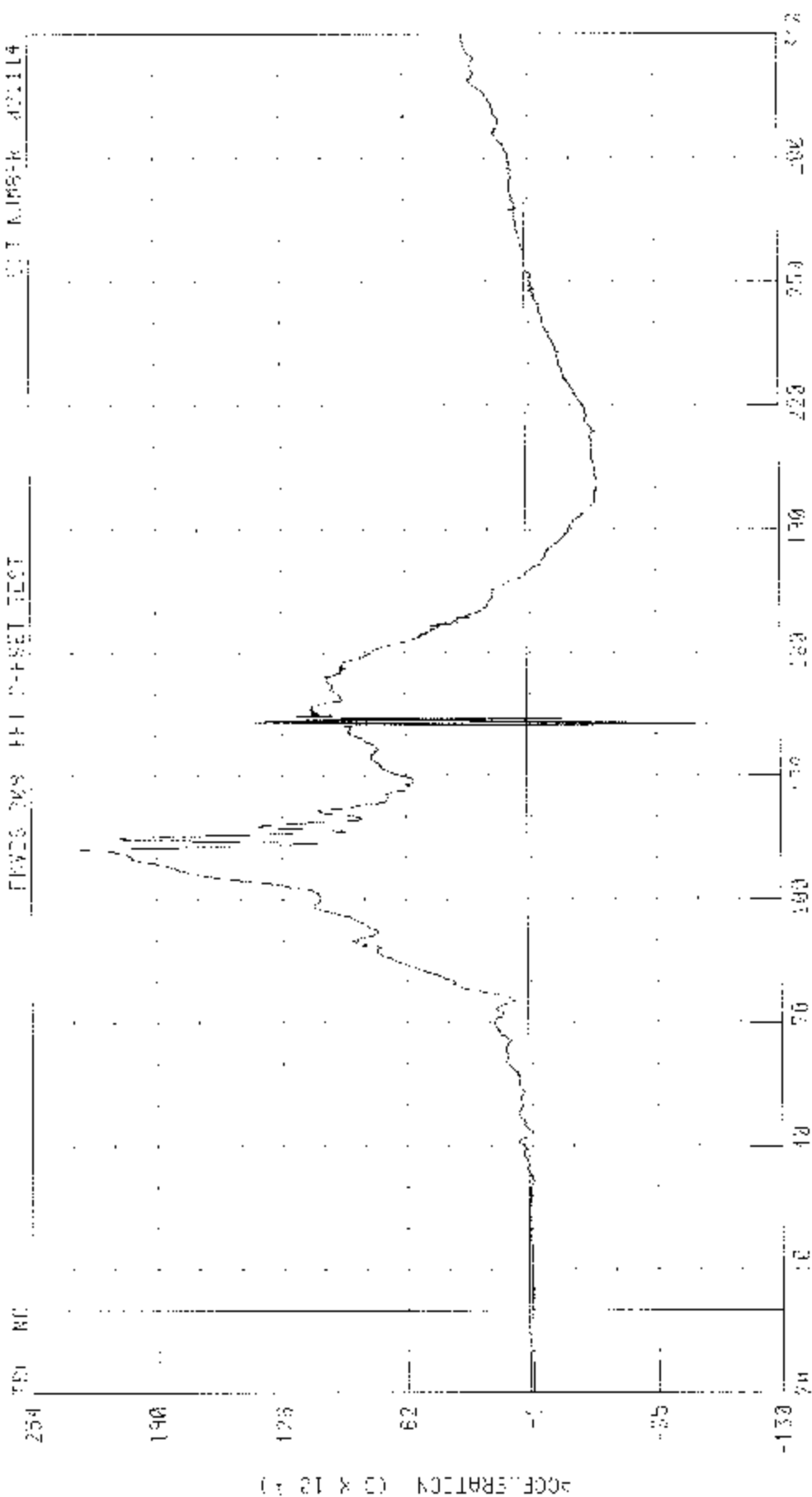
PEAK DATA: 130.00 142.00 150.00 143.00 15

035124 / 2000 CHEVROLET SUBURB 1500 4WD

DRIVES HEAD / X-AXIS ACCELERATION

PEAKS 2000 PSI C-FAST TEST

017 AMPER 402114



PEAK 140 22.88 0 0 112.42 80. 17 58 6 8 112.50 125

CHARVALL 100701 0111-20 011. CLASS 1007

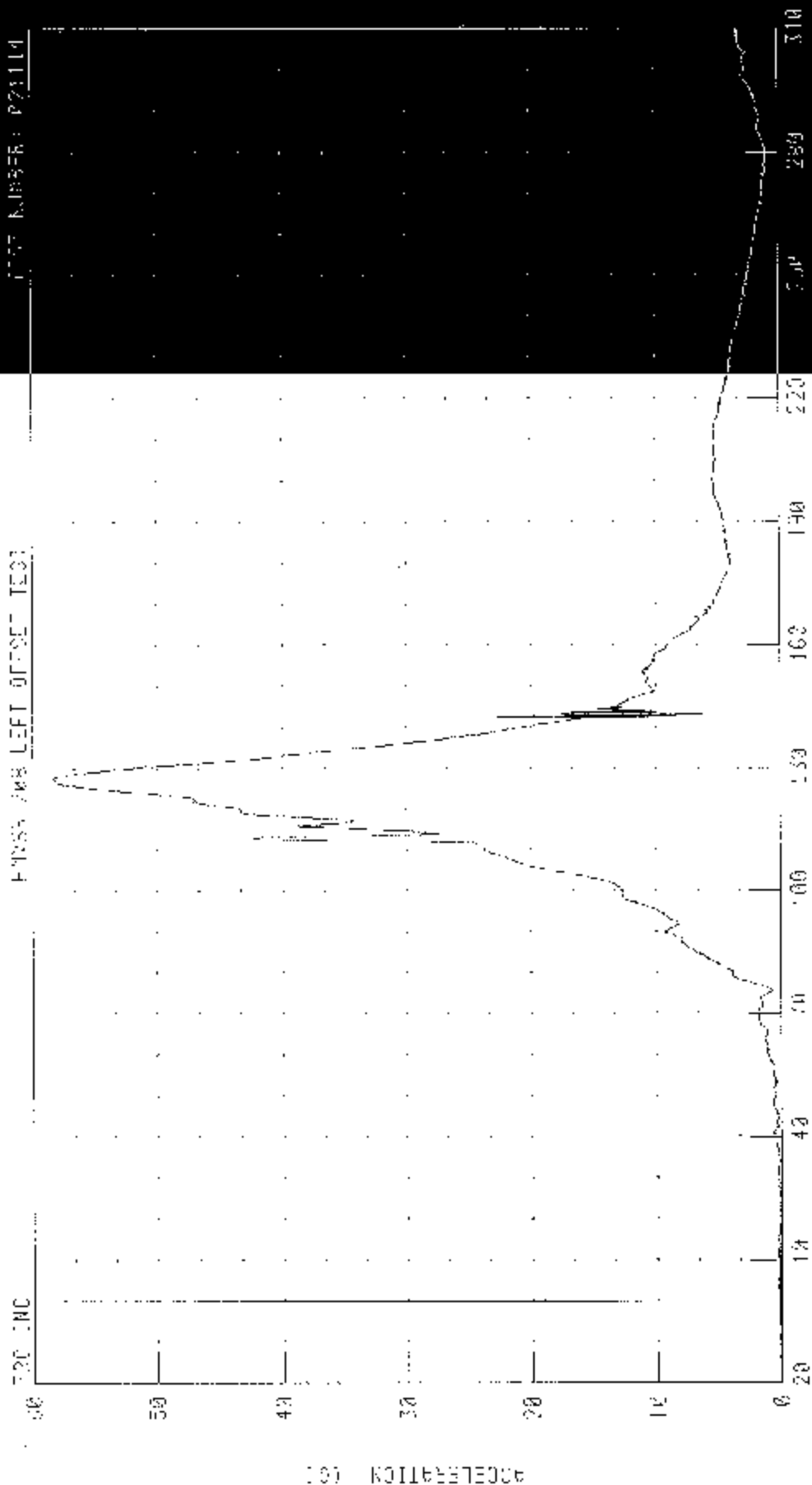


030104 / 2343 CH-400 -1 SUP 1836V 1500 ZW

CRACK HEAD RESULTANT 100-1-PA110A

PROB AND LEFT OFFSET TEST

TEST NUMBER: P23114



CHANNEL 40000 FILTER CH. G.FSS 1000

TIME (ms)

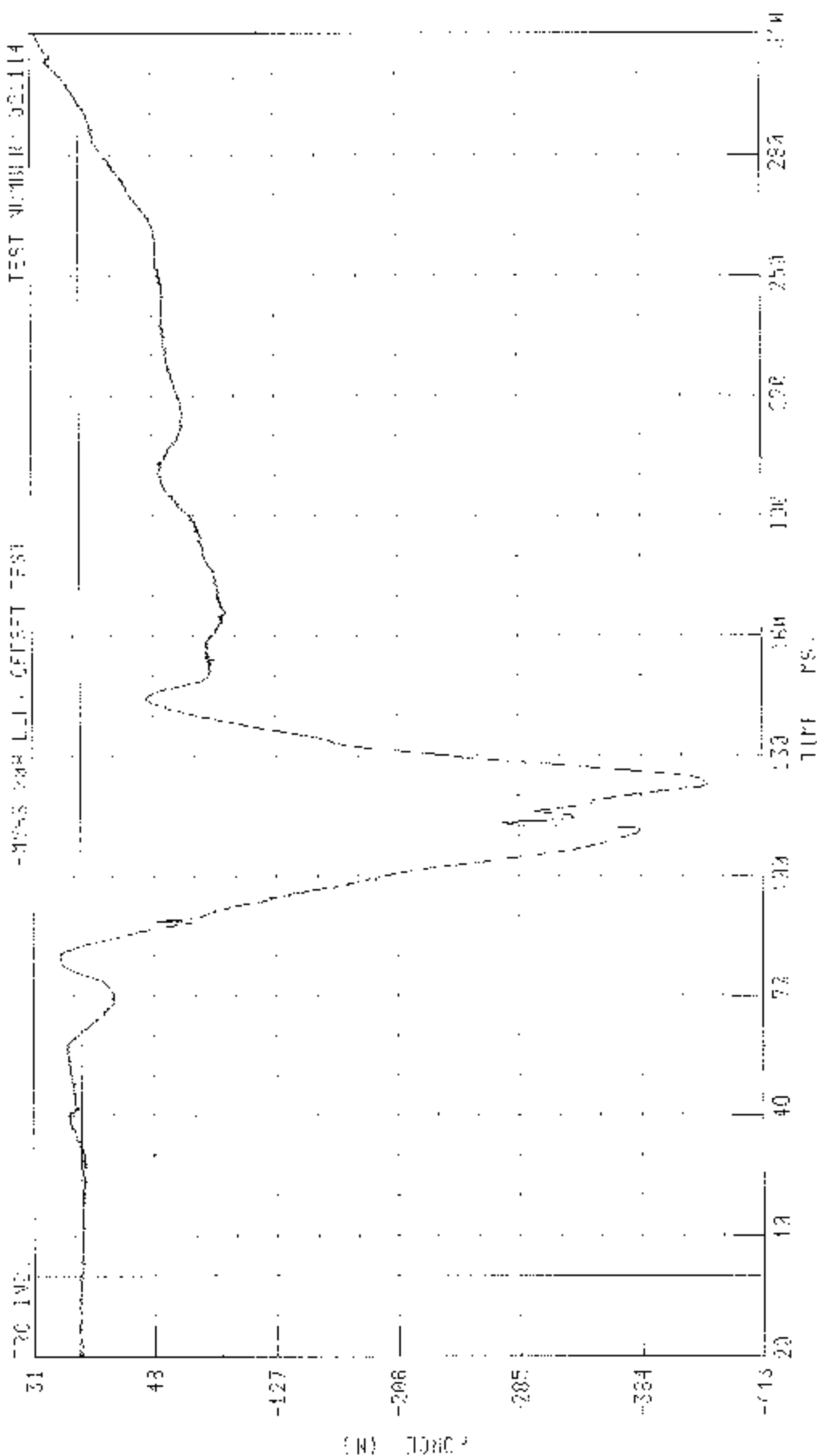
PLA JAF 58 37 6 W 127.00 10, 0 00 0 0 -19 58 71

000104 / 0003 CHEVROLET SUBURBAN 1500 2WD

DRIVER HEAD N-000 9.0 EOE TONE

-MMS PAR L.L. - GEFEST TEST

TEST NUMBER: 000114



0-4K8F1 4K8F1 FILTER: CH 0.450 1300

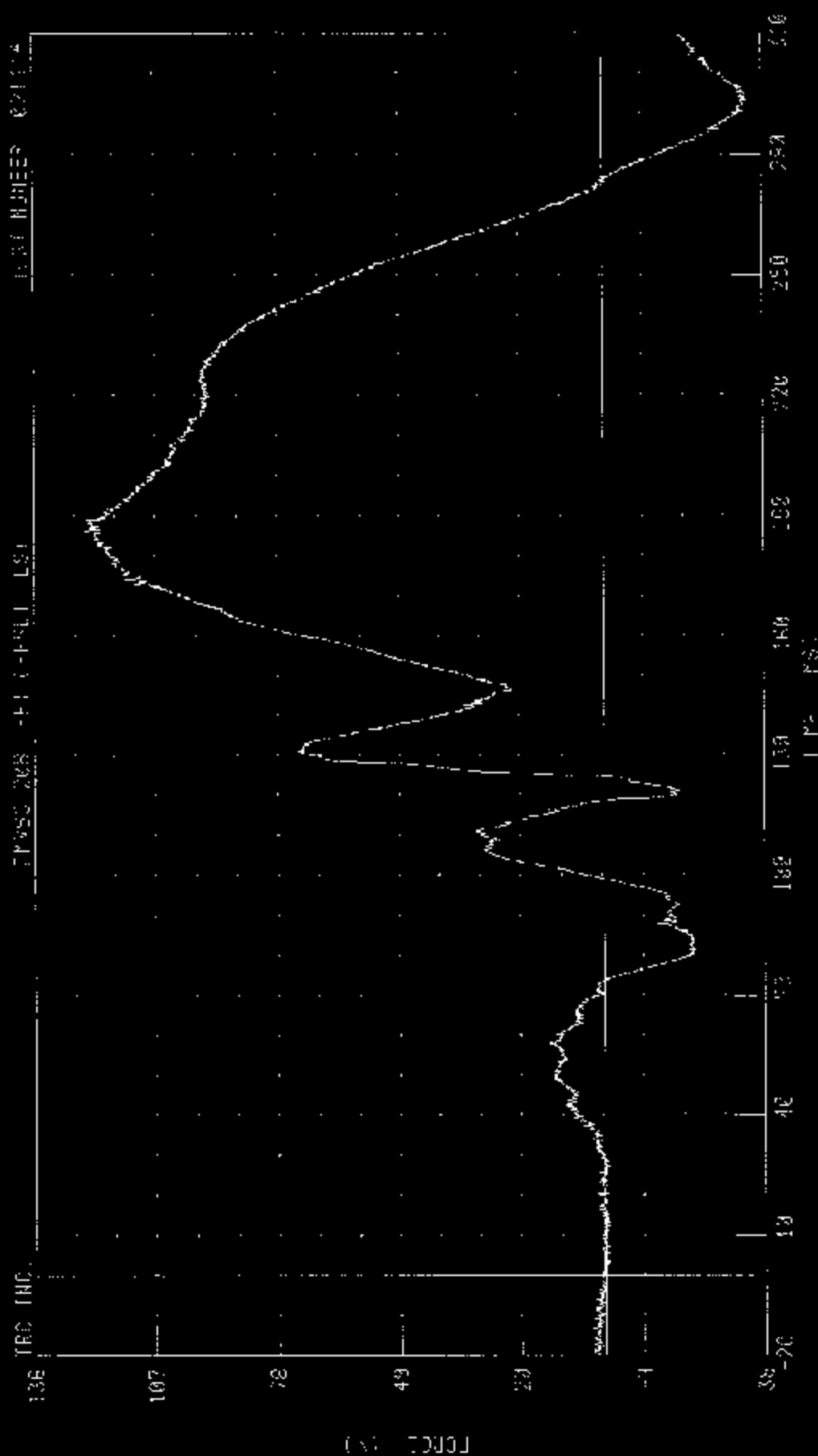
PEAK LIMIT: 28.51 N 0.400 0.4 HE. -487 W 0.0 122.00 MS

03010 / 2003 CHARTER - SURFAR 1520 2ND

14 VTR RECK CHKS SHEAR FORCE

TPSC 208 -11 1-11 151

DATE REEFS 021114



CHANNEL REEFS 14234 151

DATE REEFS 021114 151

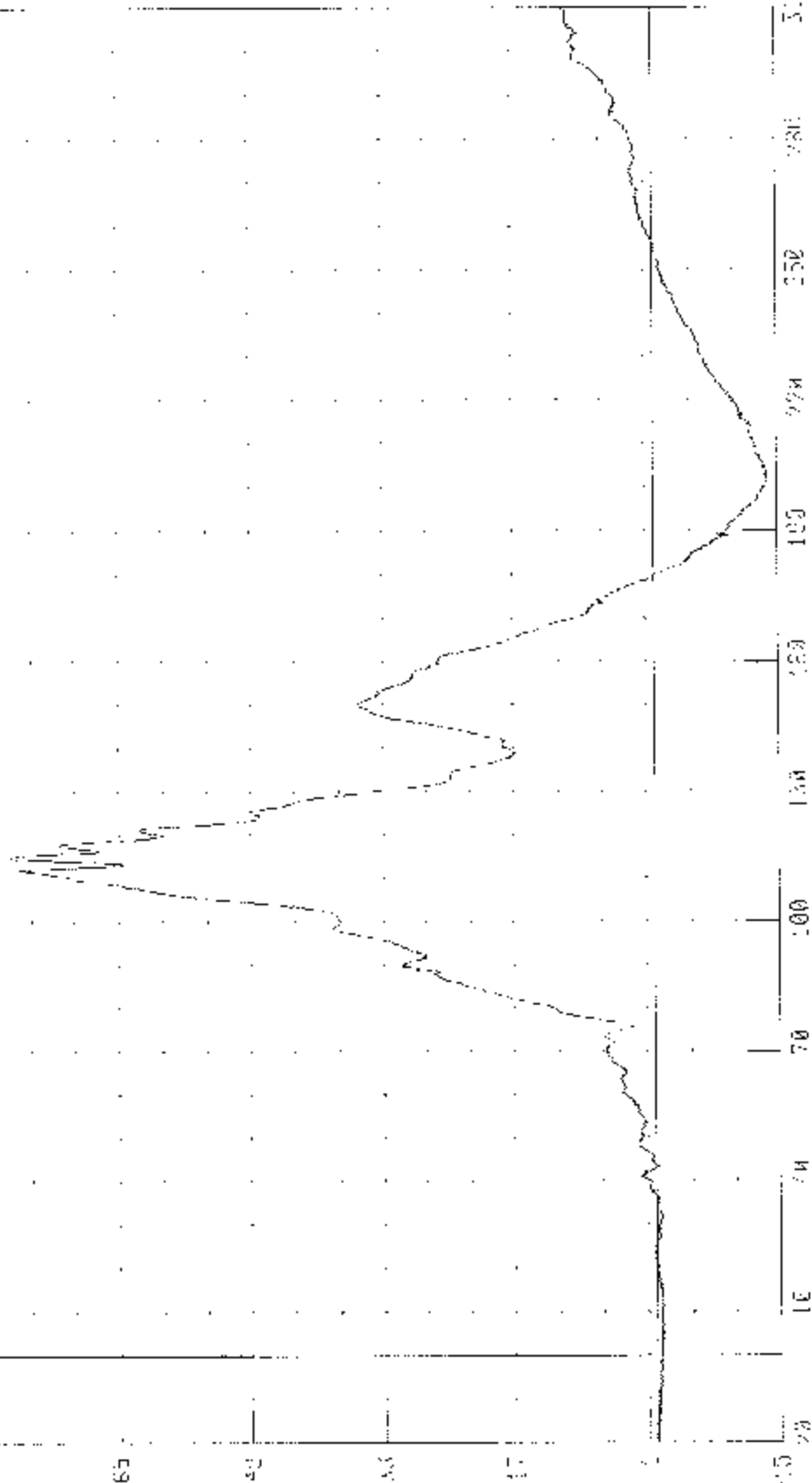
030104 / 2303 CHEYENNE FT SLD00304 1500 2ND

DRIVER AFCK Z CKTS 0X10 0000

00000 00000 00000 00000

00000 00000 00000 00000

00000 00000



00000 00000 00000 00000

00000 00000 00000 00000

00000 00000 00000 00000

020114 - 2003 CHEVROLE SUBURBAN 1500 2WC

DRIVER KICK MOMENT RECORD 2 AXIS

PHASE 200 LLI : OFFSET TEST

TEST NUMBER 020114

180 DEG

50

TOPOUT (N x 10<sup>-3</sup>)

-5

-34

-60

60

20

10

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

180 DEG

CHUCKLE : ALKXN1 FILTER : 0.1 : 0.050 : 0.050

200K DATA : 0.20 N 1 0 179 02 N3 0.36 N 1 W 151.12 MS

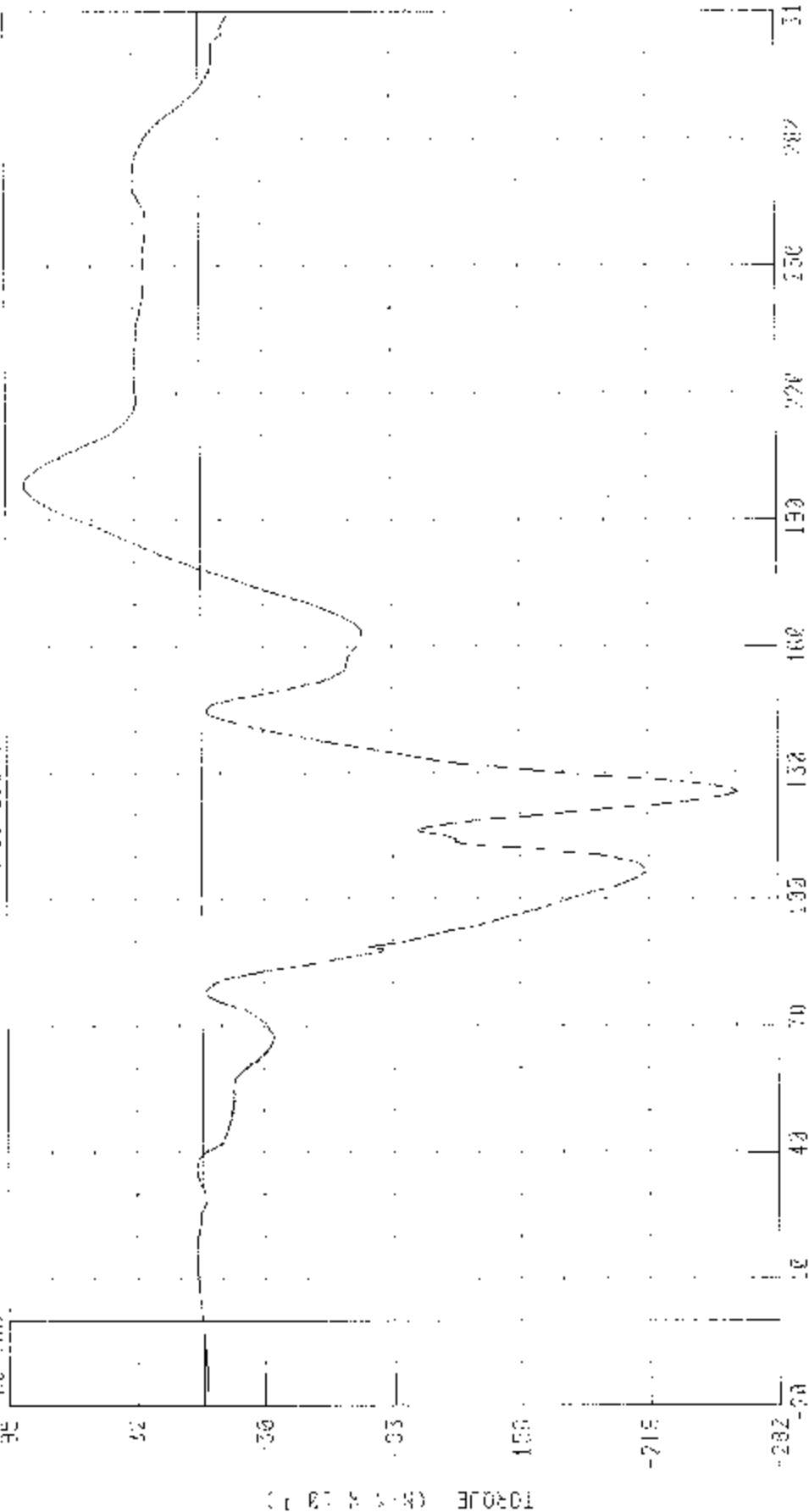
020104 / 2005 CP-5870 ET SIMUL80K 1020 ZV0

DRIVER BECK 1002AT 940H1 Y AXIS

WSS 200 LFFI OFFSET 100"

UL3 AMP5-R 020104

RC INC



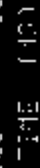
1.0E-02

CHANNEL VERM1 FILTER OF CLASS C00

020104 / 2005 CP-5870 ET SIMUL80K 1020 ZV0

UL3 AMP5-R 020104

1991-95-10-27 002 88447

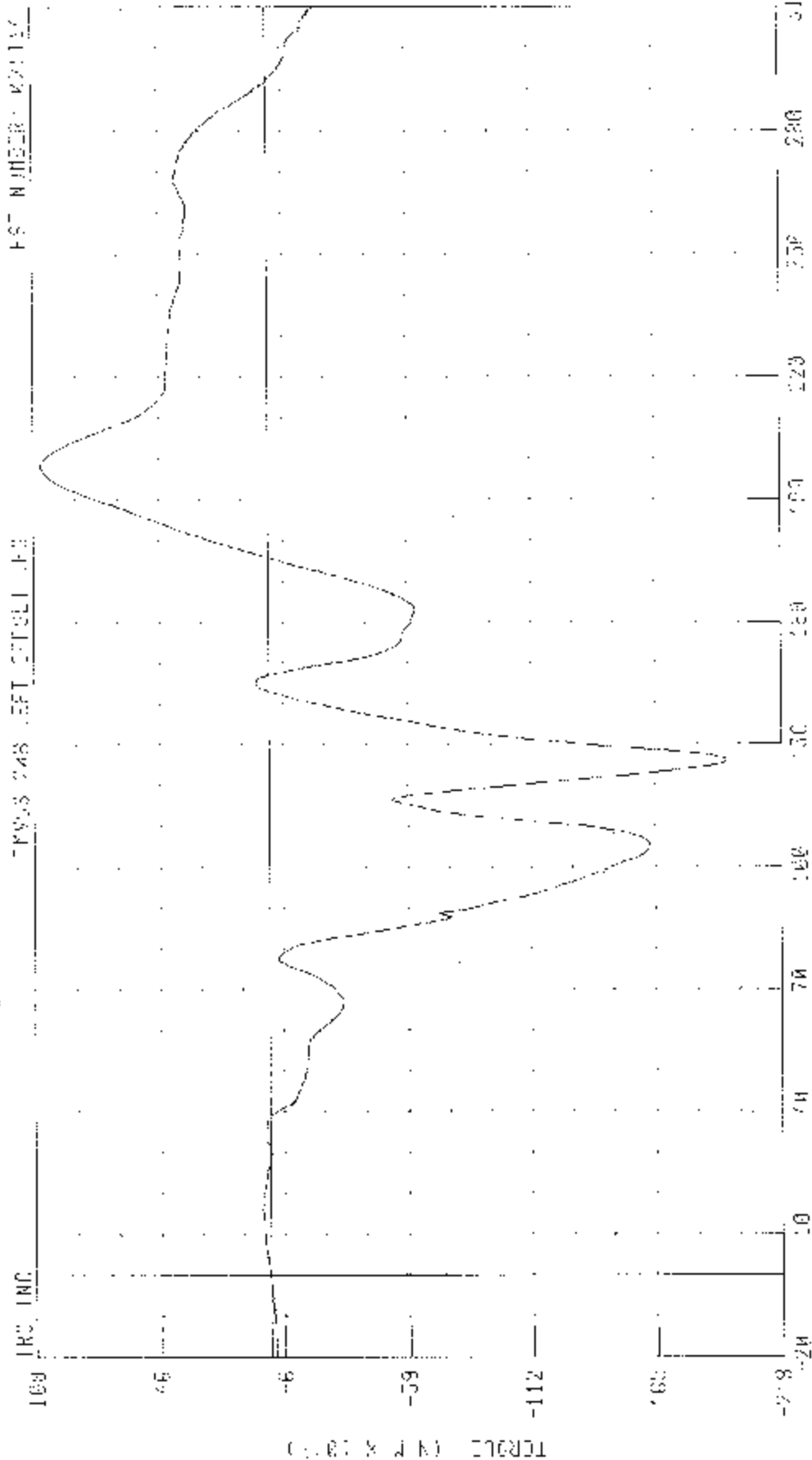
[illegible]

300200 JPEX MICROROLET SUBTRACT 1500 2ND

DRIVER WHEEL TAILN 900.2114. CONEYLE 1400.1 / 5X15

-POS 248 LEFT CTRILL 1.8

PS NUMBER 470114



TIME (MS)

FILE DET 9 29 N N 8 187 24 181 -19 01 N 10 126 15 183

CHANNEL 40001 FILTER 01 CLASS 000



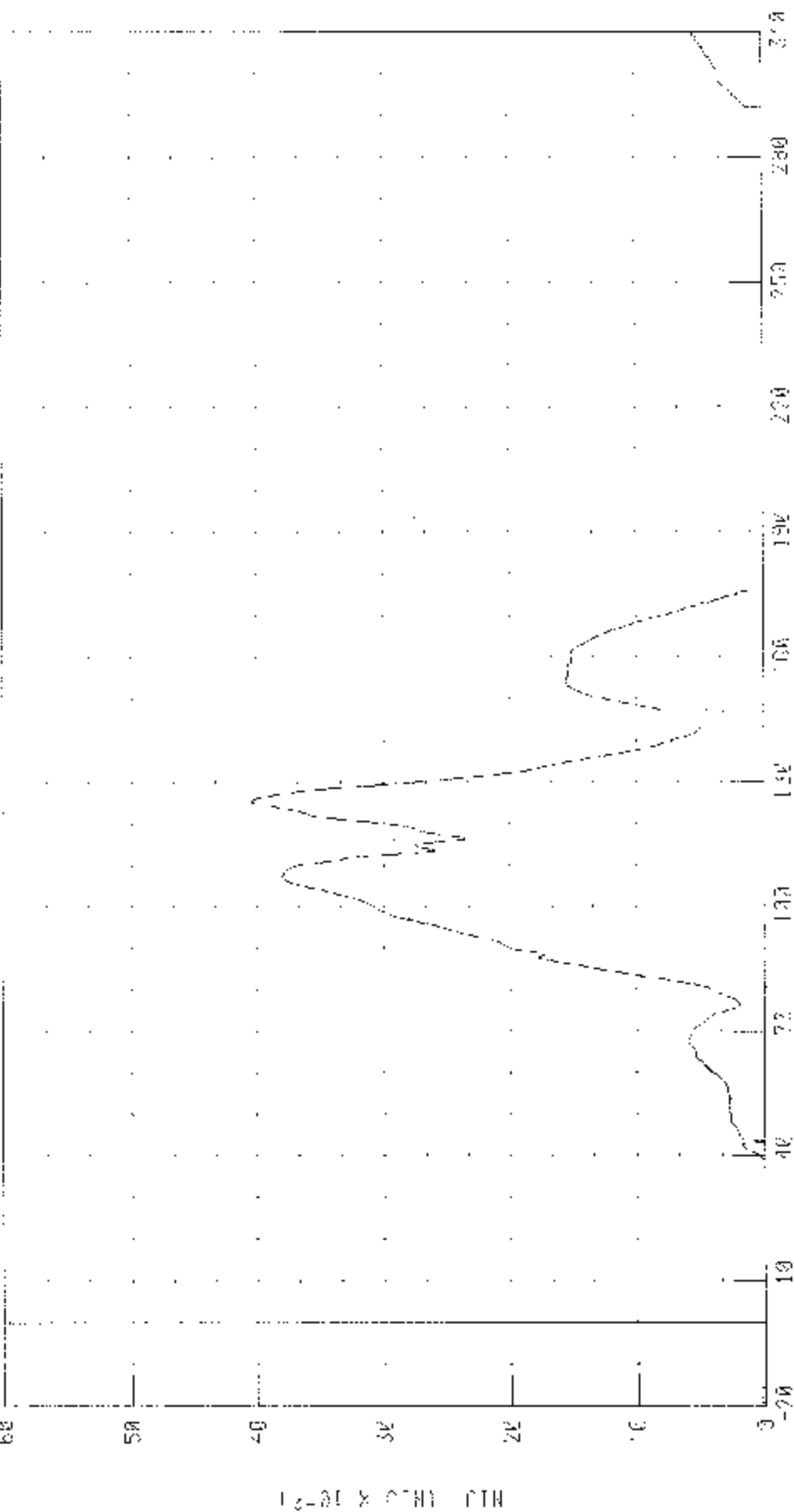
C30104 / 2003 CHEVROLET SILVERADO 1500 2WD

DRIVER'S FOOT PANS ON EXTENSION

FRONT PASSENGER FOOT OFFSET TEST

TRC INC.

TEST NUMBER: 001114



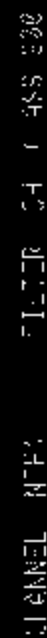
TIME (MS)

CHARS: 452 FILTER ON CLASS 520

FILE: 4- 4.40 NLS: 0- 76 MS: 0.00 VLS: 0- 20 32 PS

# THE UNIVERSITY OF CHICAGO

671.136JLB - F - 824.53411



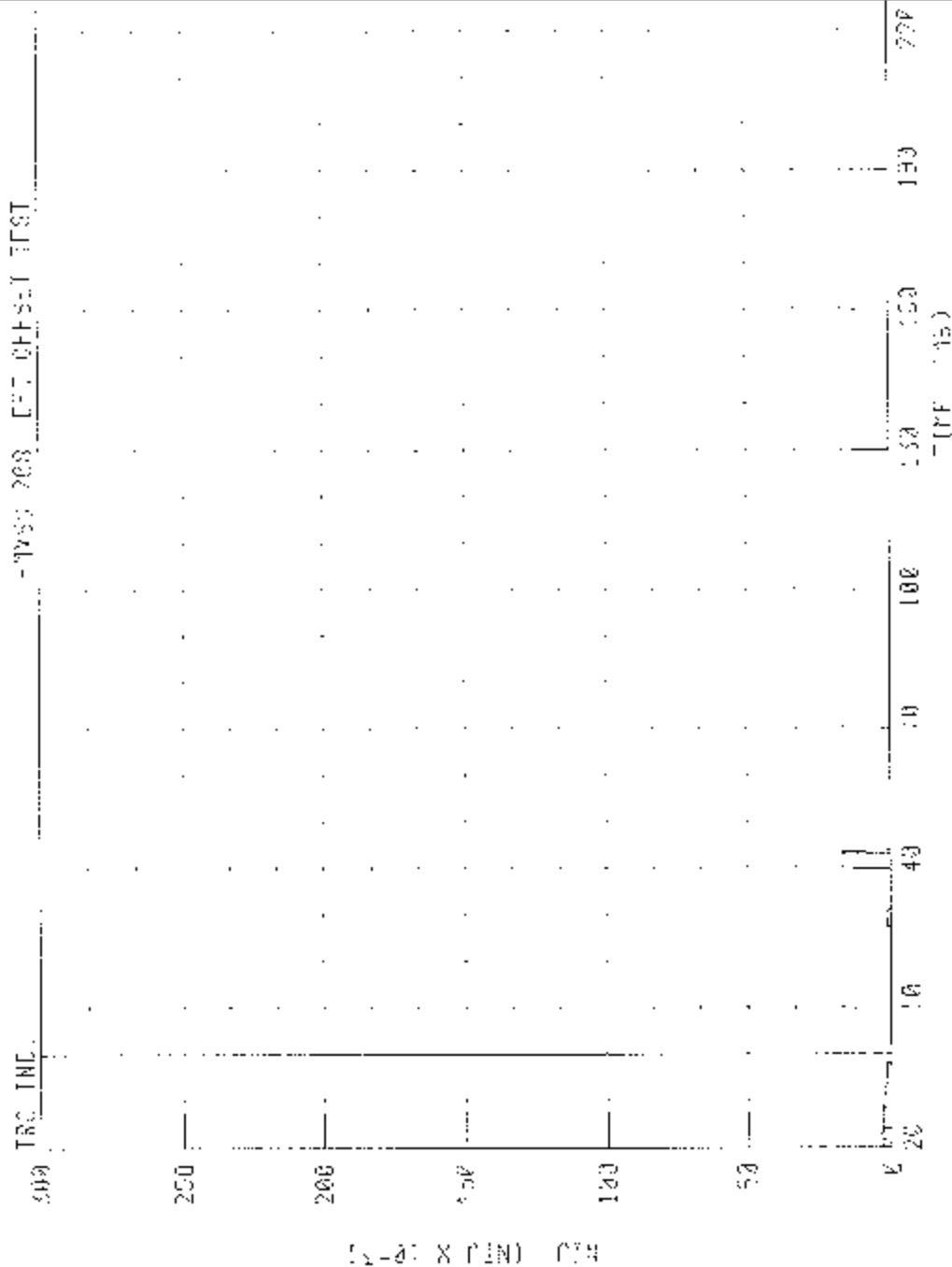
Sl. No. 26- 9. 01. 2017. 17. 46. 27. 9. 01. 2017

© 2014 / 2025 CHEVROLET SUBARU 302 935

## THE CURRICULUM

1911 1-5-40 1-7 806 1546-

TCT Page: 2714



(c) Full-

[illegible]

COGNITION: ACEI - 11.13; CI - 0.55; CVD

600 11.03 MS.

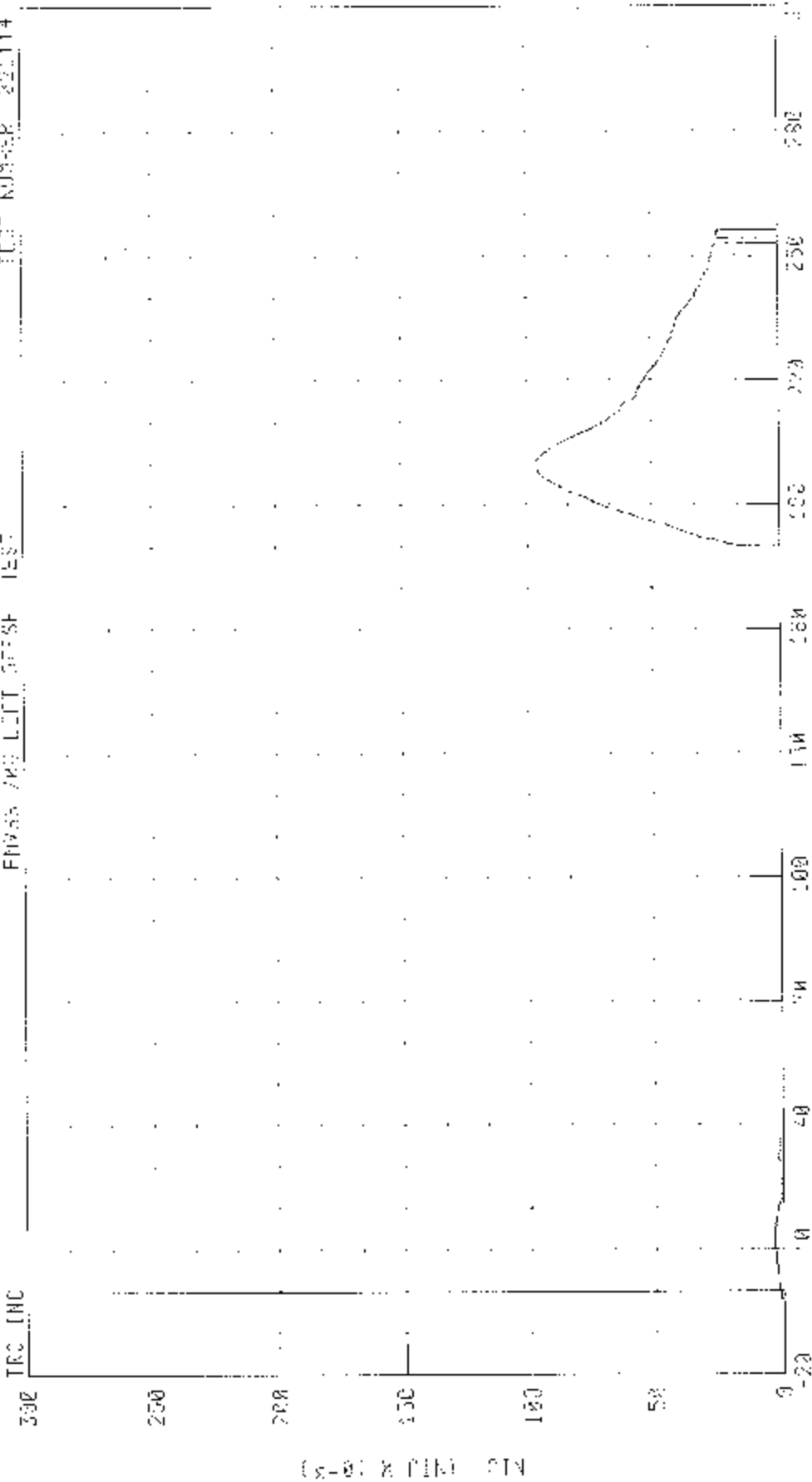
030194 / 2023 CHEVROLET SUBURBAN 1500 2WD

DRIVER R/L COMPRESSION/ LX10H

PHASE TWO LEFT SPIN TEST

TEST NUMBER 020114

TRC INC



CIRCUIT VCH1

FILTER ON 0.100 0.00

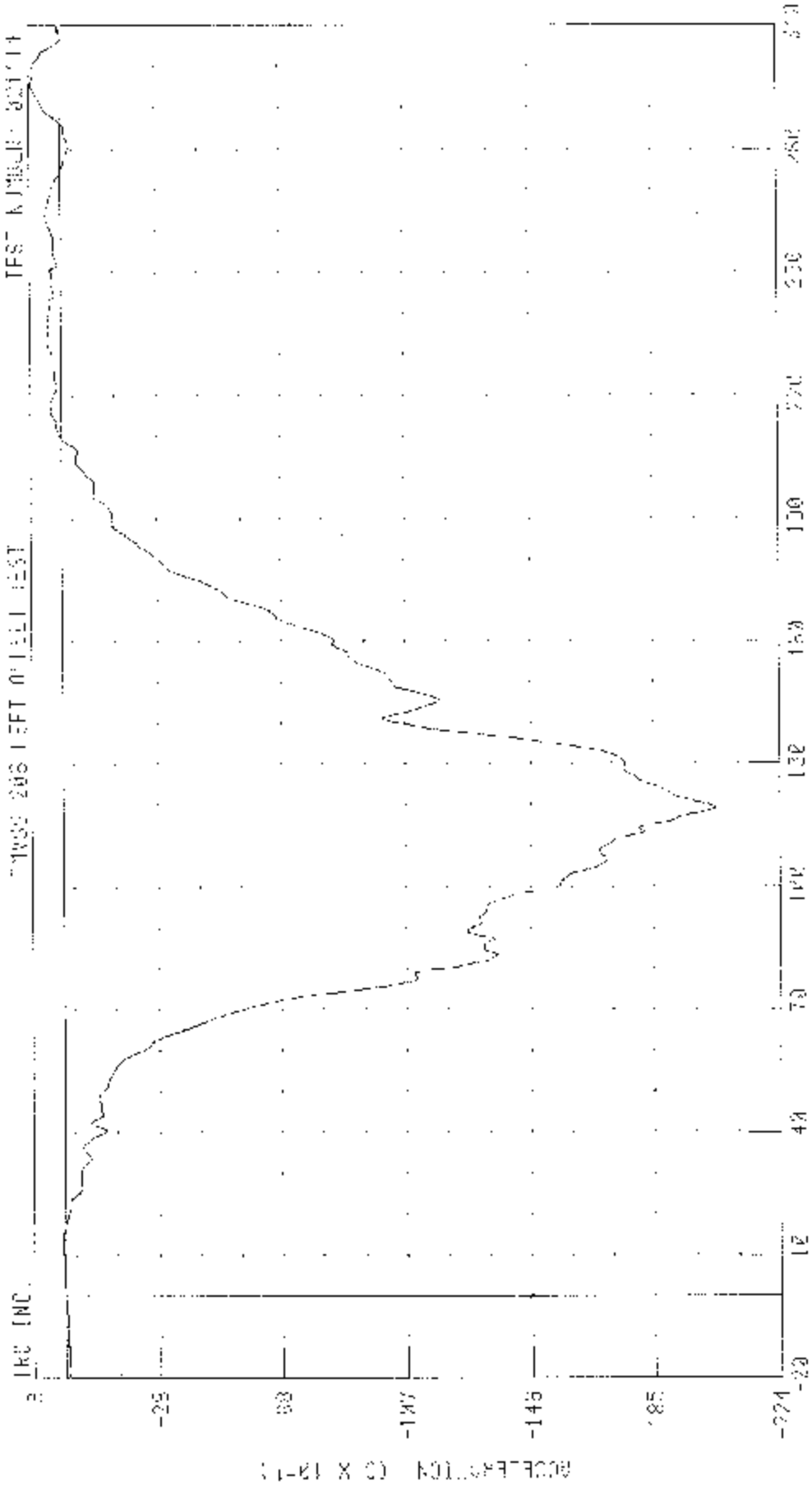
1 IN 1750

PEAK DETECT 2.18 INCH 100.15 IN 2.00 INCH 0 -24.00 IN

2004 / 2003 CHEVROLET / 4DR 204R 1500 2ND

DRIVER SEAT X-AXIS ACCELERATION

1999 200 LEFT OFFSET TEST

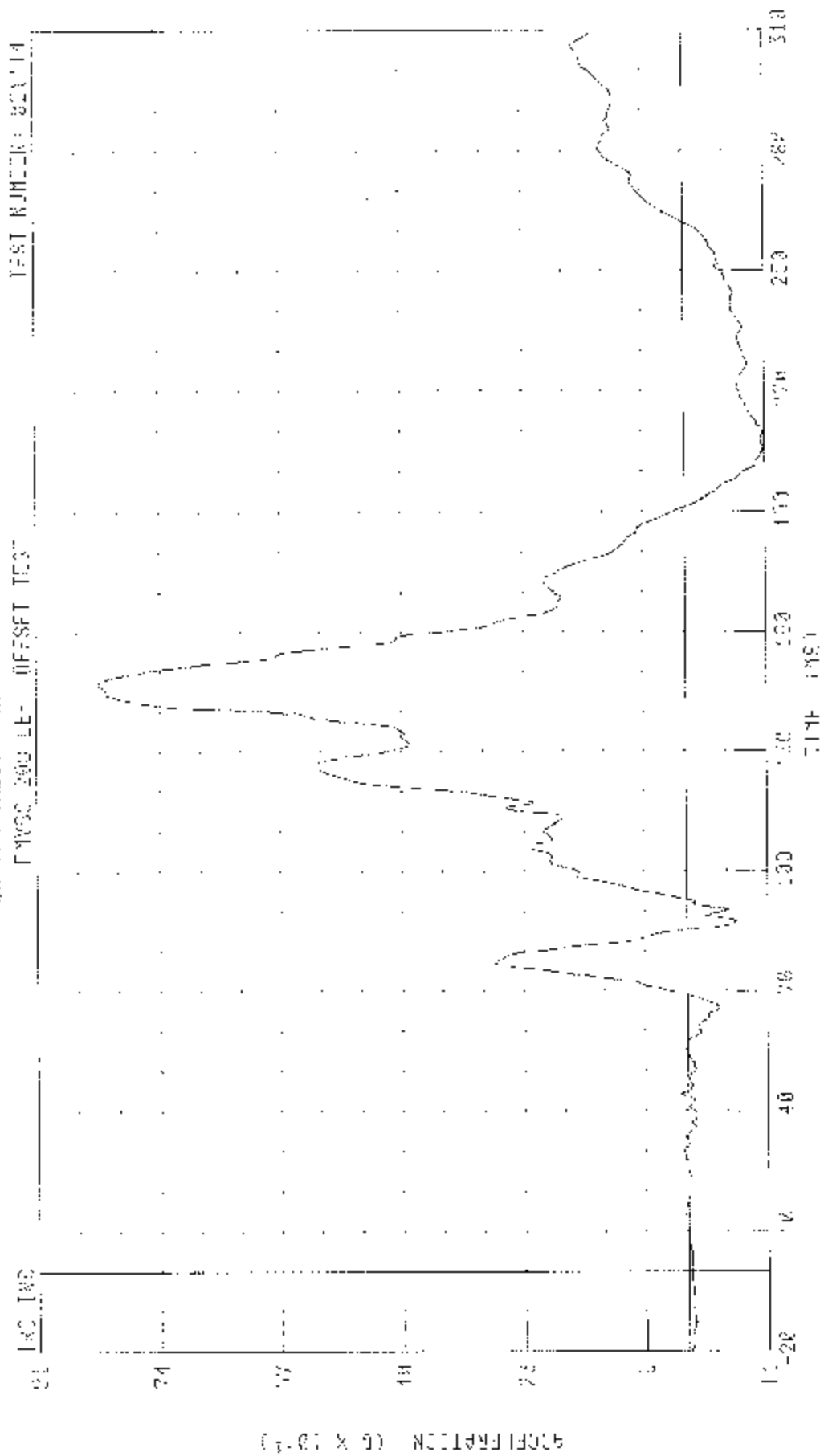


CINQUEL 25 X01 FILTER: 200 CROSS 180

TIME (SEC)

DATA: 2 50 6 8 205 68 15 -18.40 2 6 1 9 14 10

030104 / 2003 CHEVROLET SUBURBAN 1500 2WD  
 CRASH-2 CHEST V AXIS ACCELERATION



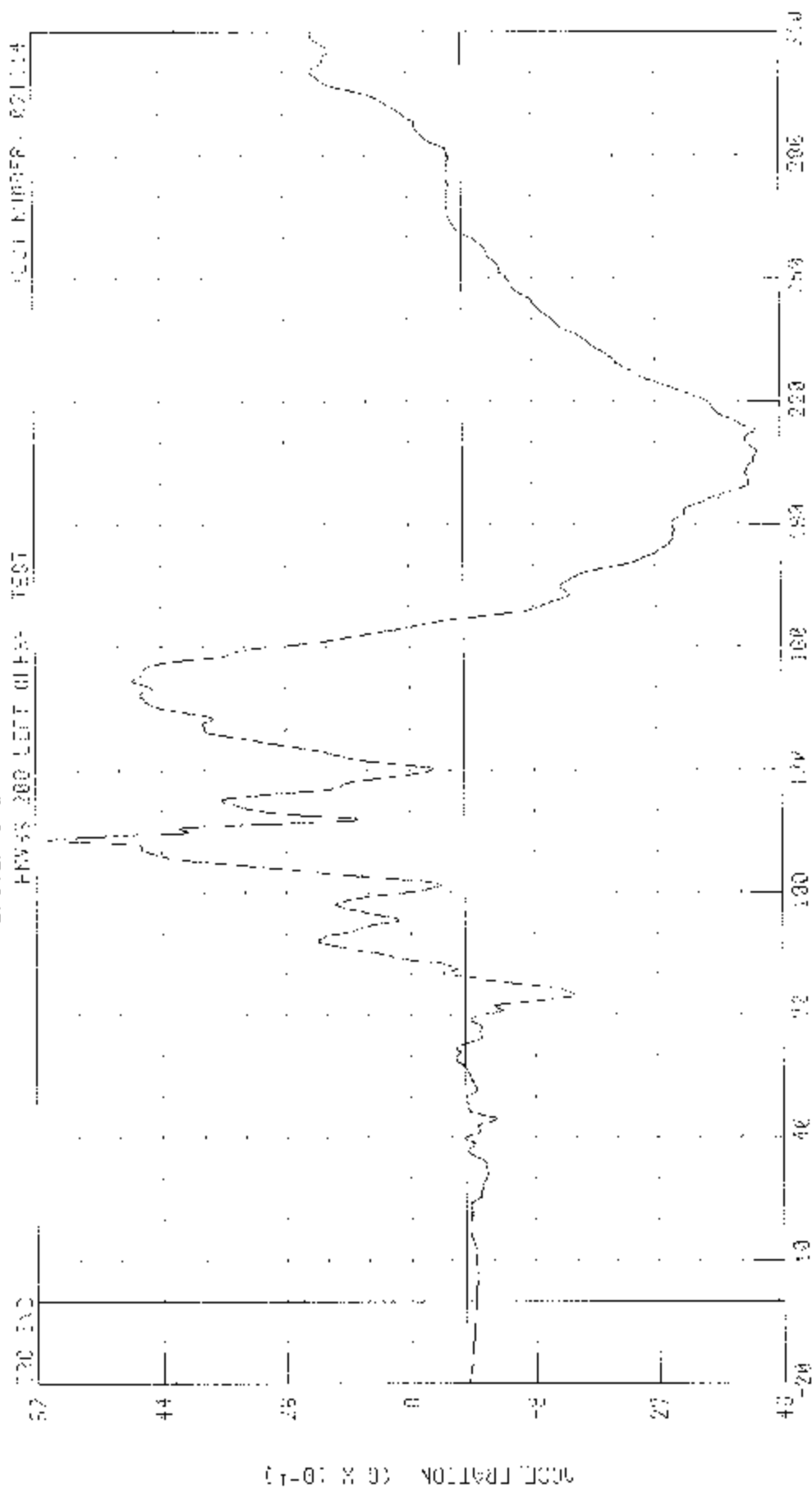
CHANNEL: OR1Y01 FILTER: CH 0-ASC 180

FLAT JITTER 8.75 0.0 147.12 Hz, 1.00 0.0 200.00 Hz

130164 / 2003 CH-90L FI GLOBE30V 1500 001

FILE 6 EST 7-AXIS ACCELERATION

PNV 55 200 LEFT GYRO TEST



CHANNEL 087201 FILE 6 CH 0055 180

TIME (PS)

FILE 6 CH 0055 180 207.00 207.00 207.00

CARTRIDGE / 2025 CHEVROLET SILVERADO 1500 2WD

DRIVER SEAT BELT LANE ACCELERATION

-MS80 200 LPS - OFFSET 2201

TEST NUMBER 021114

229 INC INC.

190

ACCELERATION (G x 10<sup>-3</sup>)

150

110

70

30

0

180

120

160

100

220

250

280

320

TIME (PS)

CHANNEL: CONTROL FILTER: CH. 0 000 100

PEAK DATA: 20.7E 0.0 119.52 NS, 0.00 G M 20.90 G



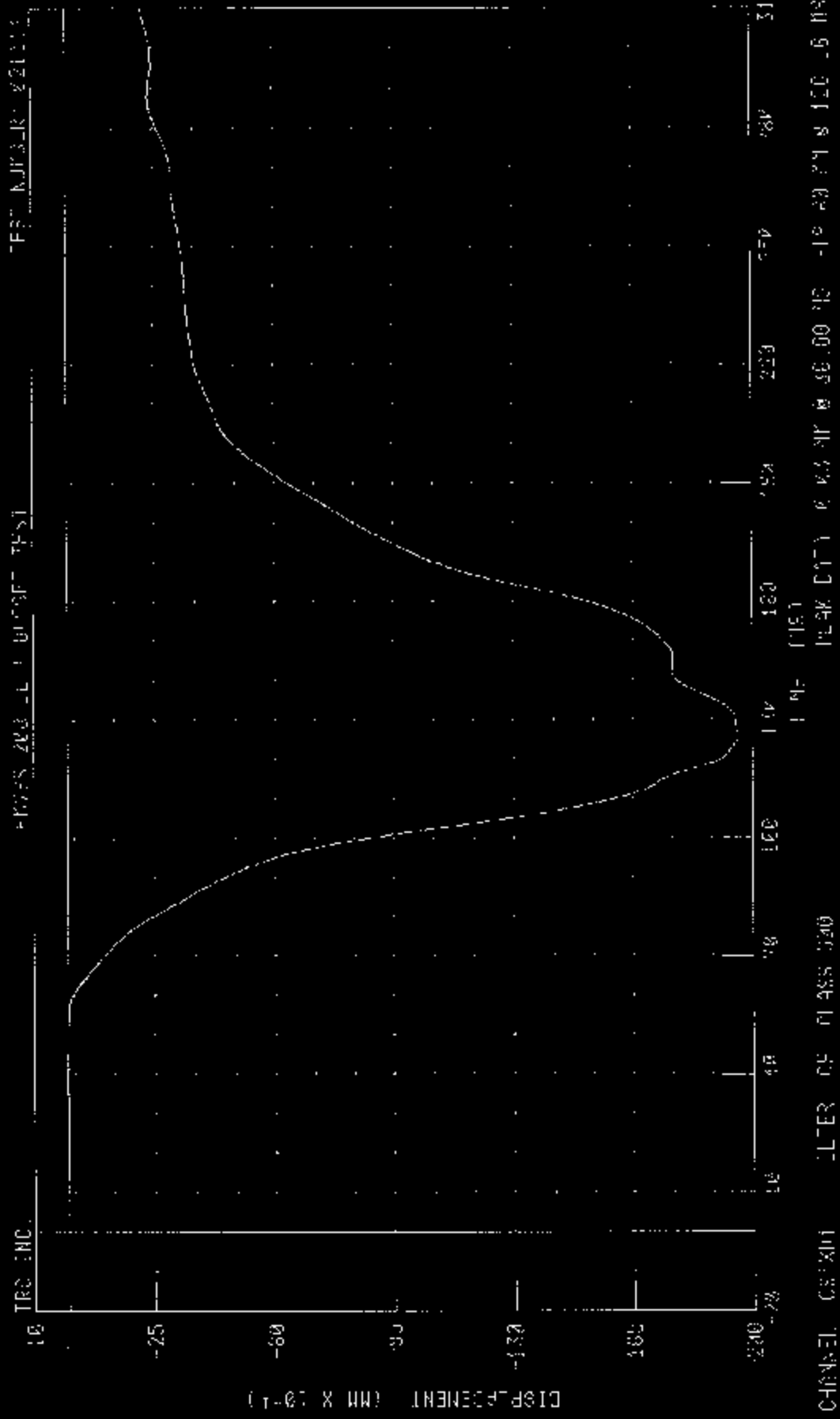
0.00125 \* 2003 CHIT930 FI SUBJ:RPM 1500 20F

ORIGIN: CEST 355.1111V

PROPS 203 -L 0 0000F TFSI

TFSI NJR3LR 221111

TRC INC.



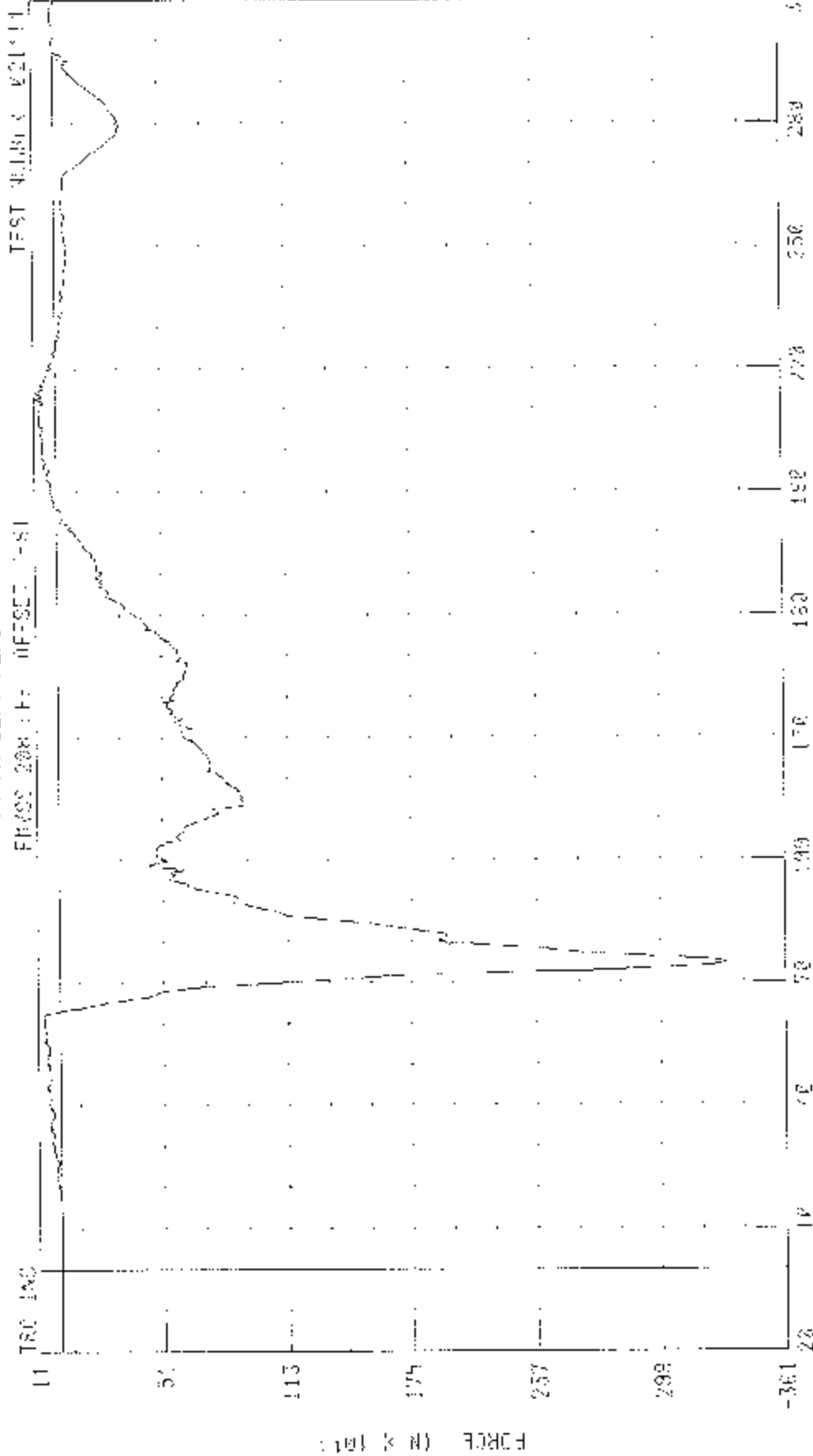
00:50:13.000 FILTER OFF 0.488 5300

00:50:13.000 0.488 5300 0.488 5300 0.488 5300

COPIES - 2025 CHEVY 2011 SUBURBAN 1100 2ND

DRIVER LEFT FOOT FORCE

FR/SC 208 LF: OFFSET -SI



CHANCEL FIN/HI LITER C- CLASS 820

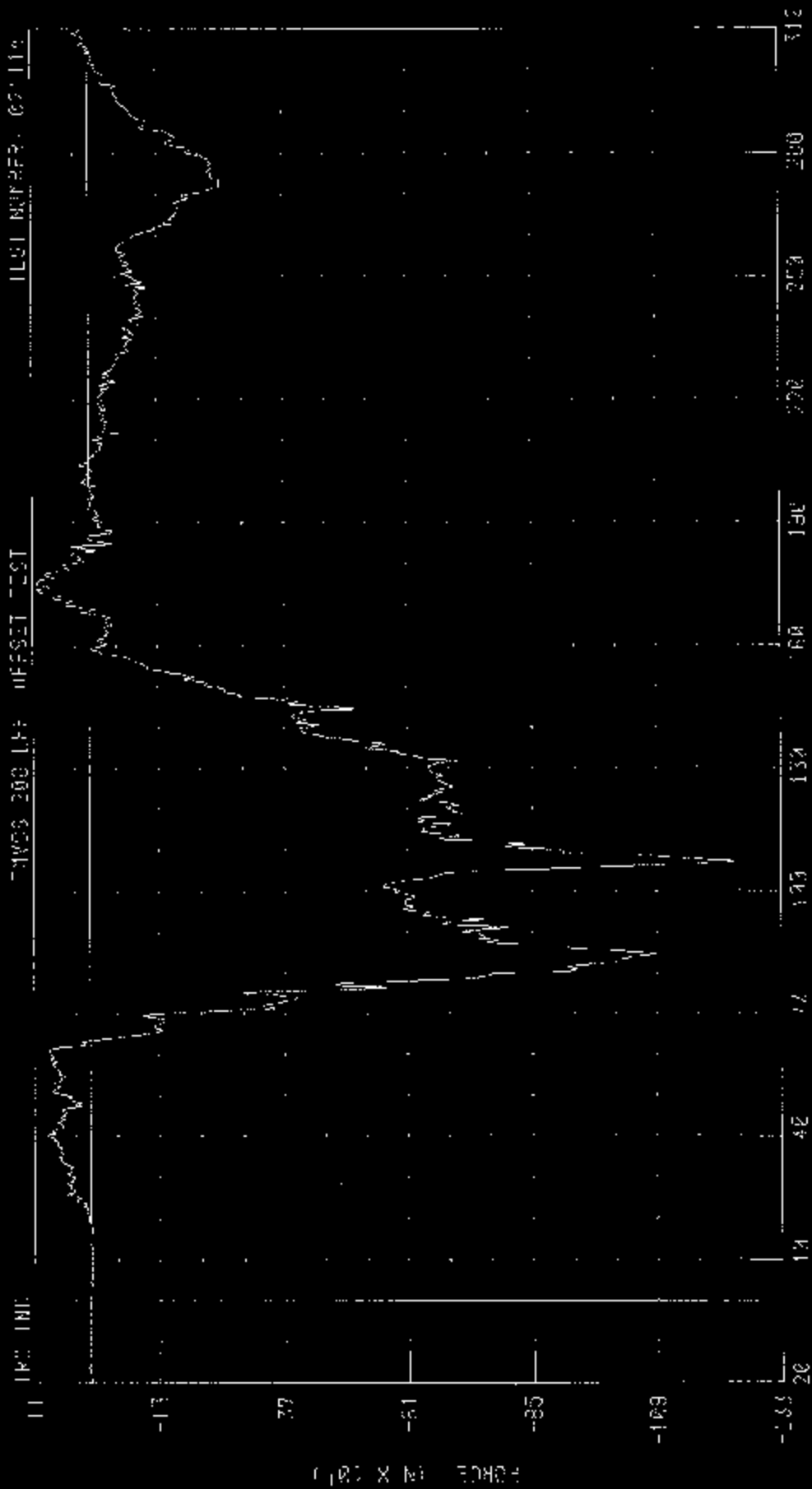
PLAY DATA 100.48 N @ 214.10 MS; -1000.13 N @ 277.80 MS

030104 / 2003 CHEVROLET CALIBER 1500 2X1

DRIVER RIGHT PLIAGE FORCE

TRUCK 200 LBS OFFSET TEST

IL01 NUMBER: 021114



TIME (in s)

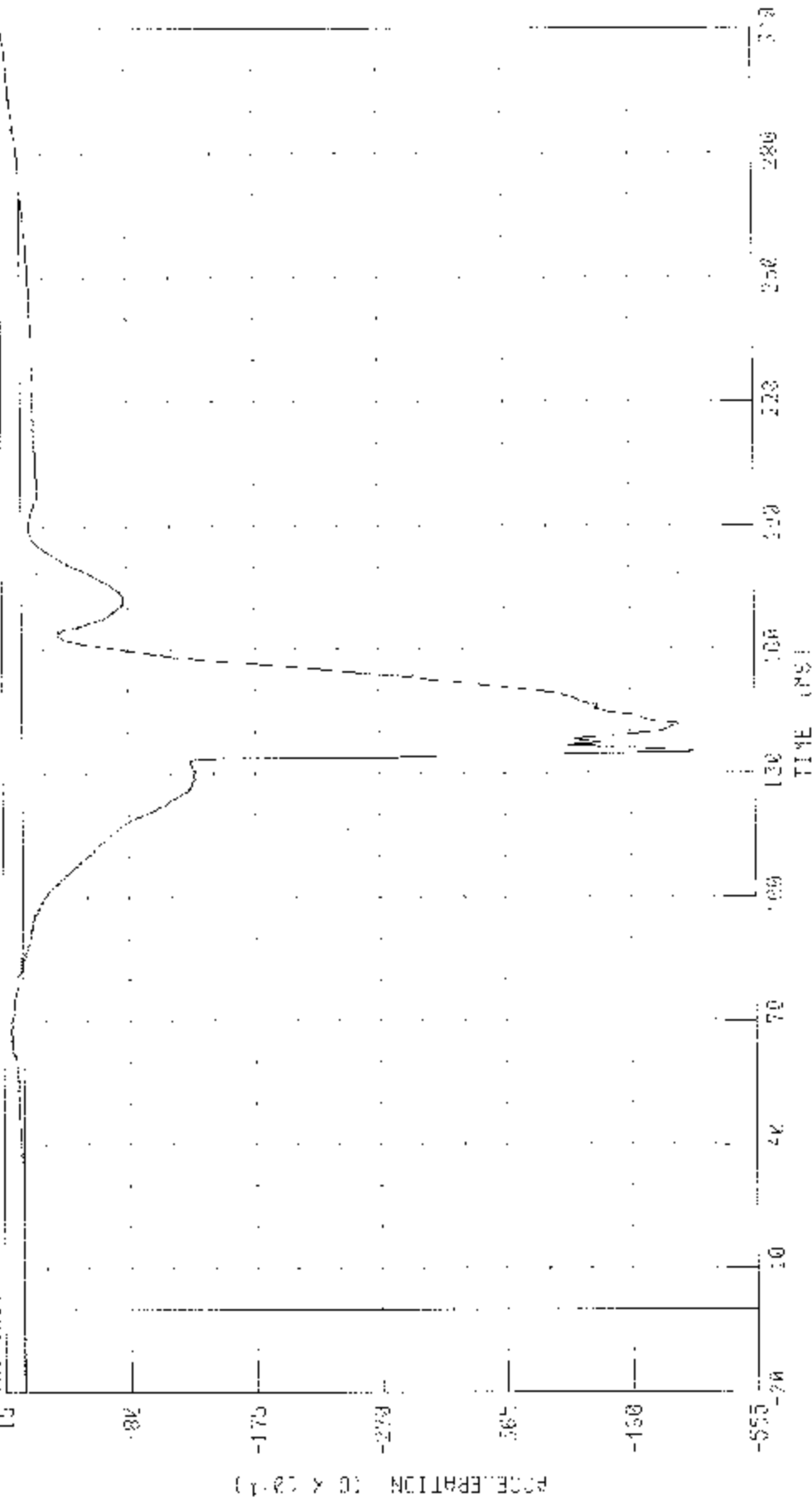
CHANNEL: R-H01 / FILTER: OF 11438 020 PIPE DATA 107.87 N X 173.84 DE, 1270.82 K @ 107.36 Hz

DATE: 7/20/83 CHEVELL - 513020N 150000W  
RIGHT FRONT PROCESSION HEAD X AXIS OFF POSITION

-1452 200 1451 5-FSET TEST

TRE INC.

TEST NUMBER 000100

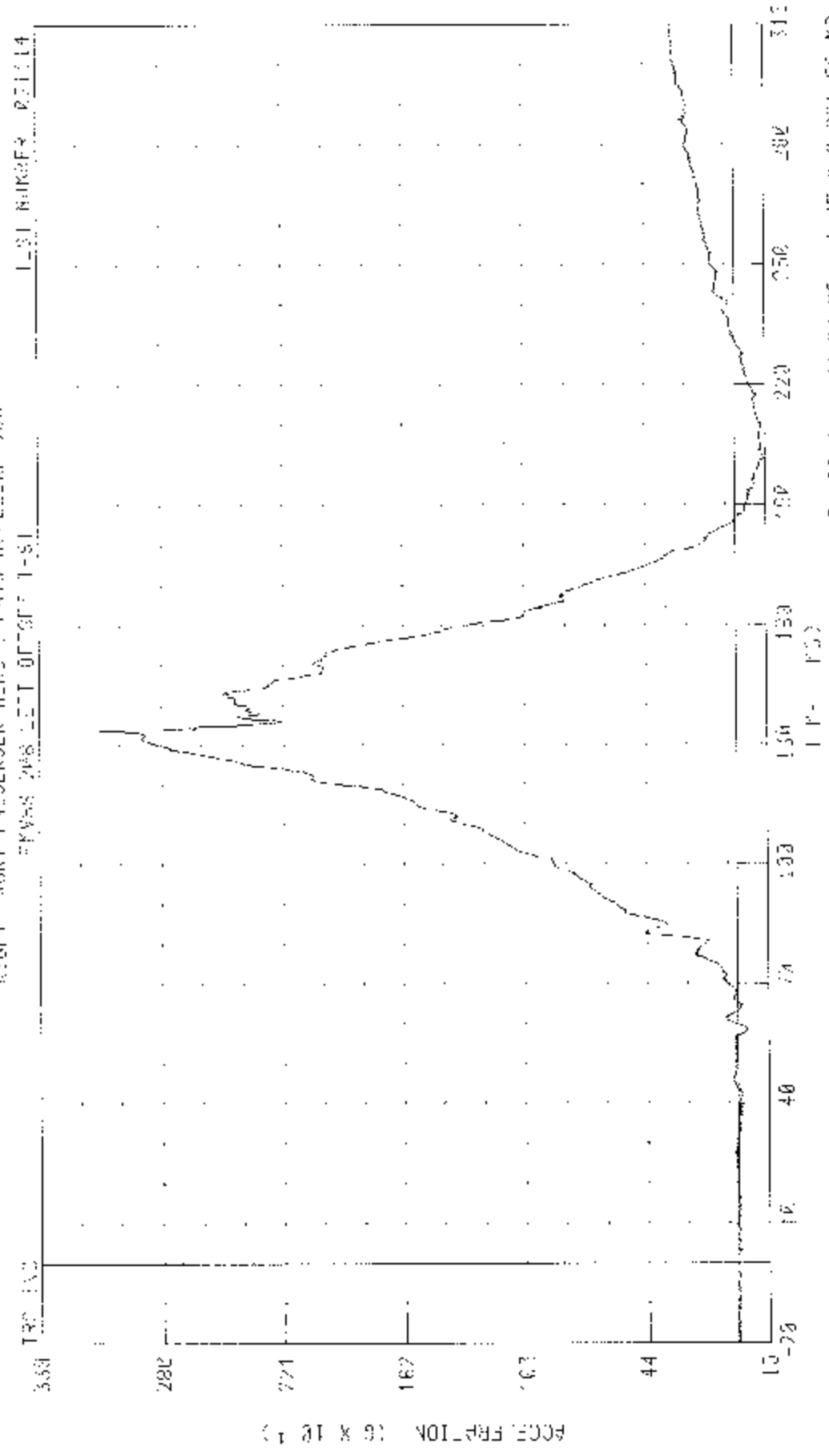


CHANN 11 HF0002 1.00 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0

PEAK RATE 1.00 0.0 0.0 0.0 10.0 0.0 0.0 0.0 10.0

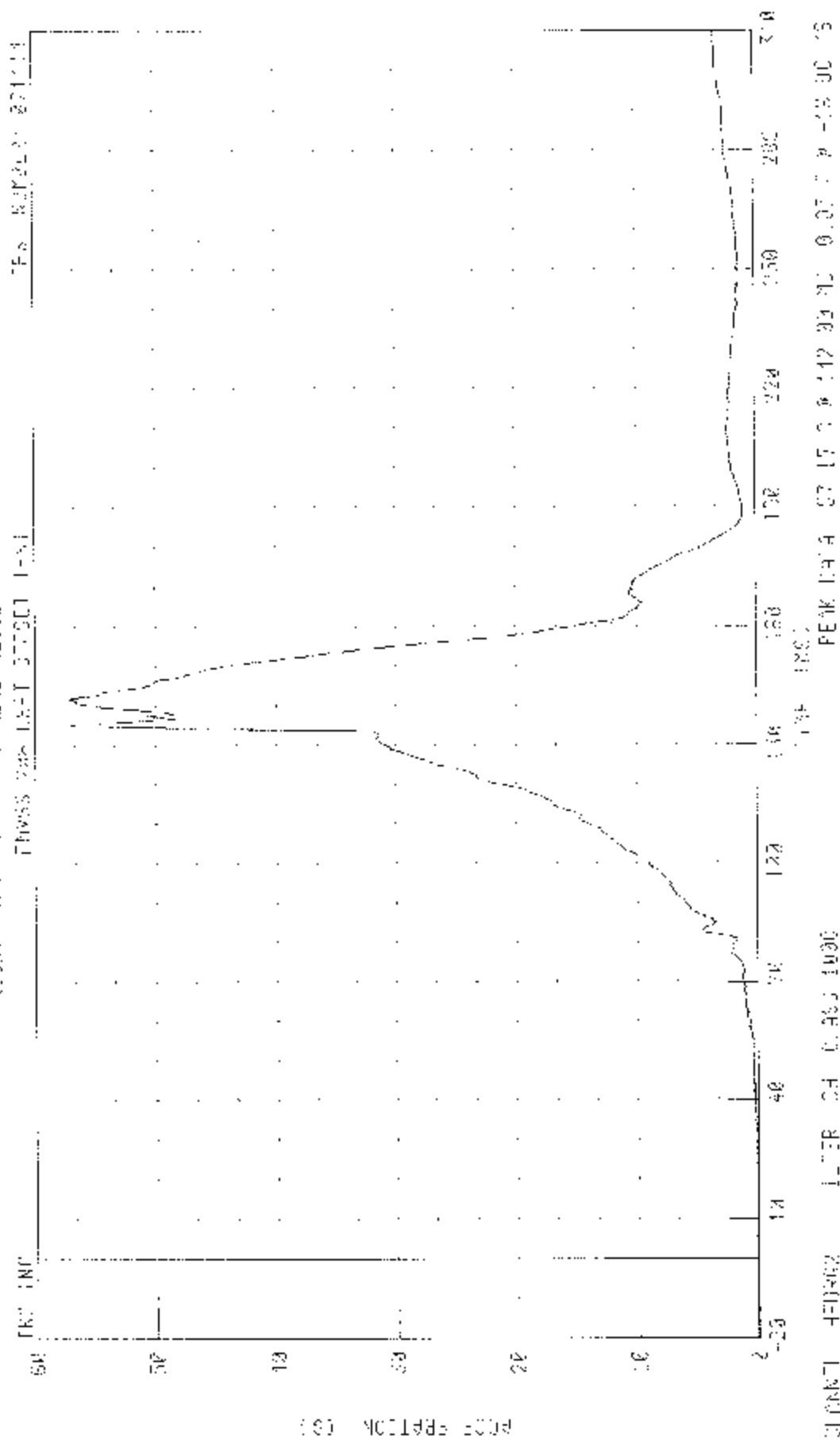


C 30104 / 2003 CLEVELAND SUBURBAN 1530 ZWT  
 RIGHT - FRONT PASSENGER HEAD 7-AXIS ACCCELERATION  
 #KVAS 208 LEFT OUTPUT 1-81



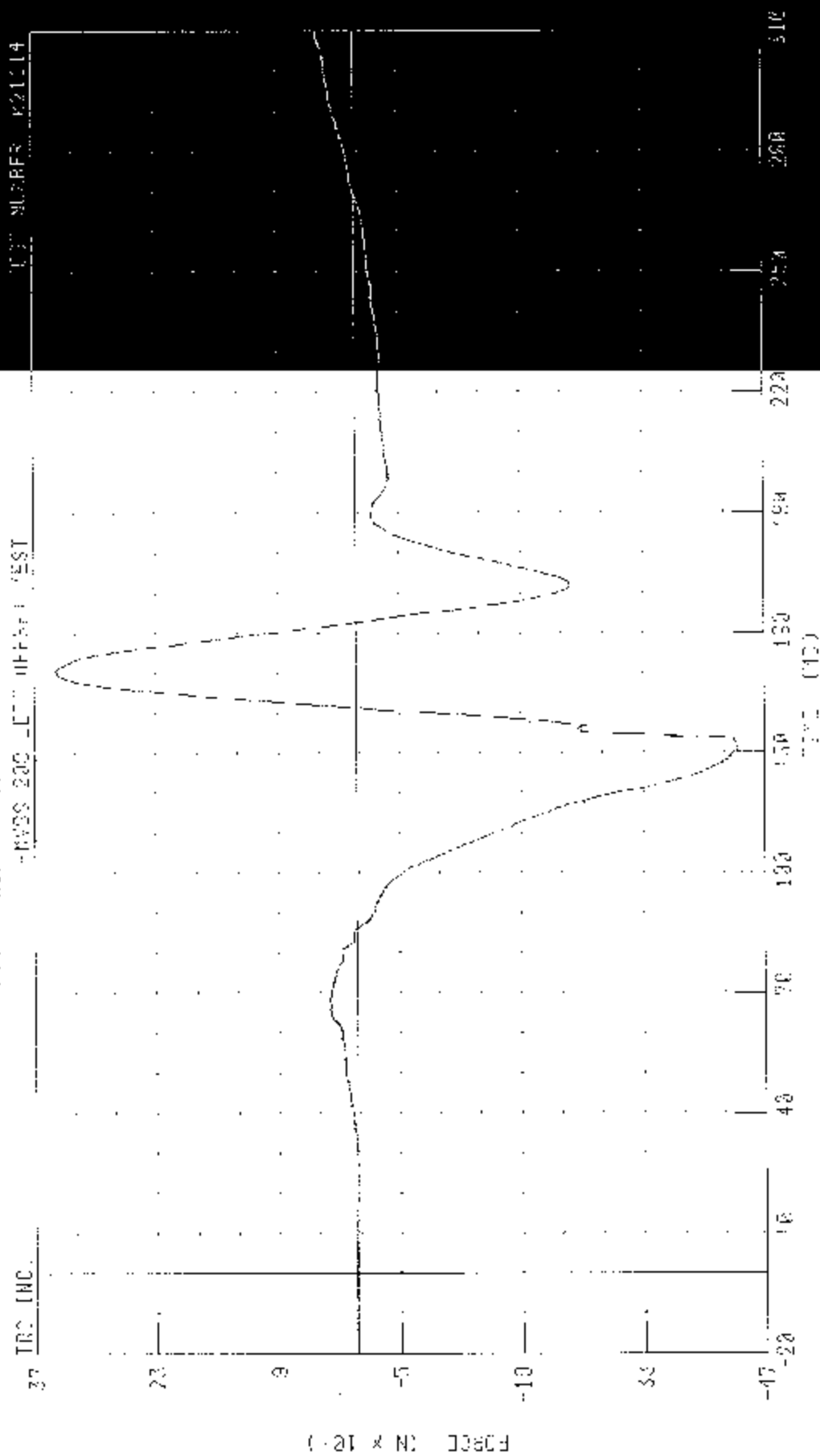
CHANNEL - HFL292 FILTER - 0.5 CLASS 1000  
 550K 1419 31.02 C R 134 20 PG. -1 45 G R 201.02 MS

COMP04 - 2003 CLEVELAND SHIPBOARD 1500 200  
RIGHT FRONT WHEELS HEAD REGULATED ACCELERATION



COMP04 - 2003 CLEVELAND SHIPBOARD 1500 200

030104 / 2003 OFFEROLET SUBURBAN 1500 SW  
 RIGHT FRONT PASSENGER NECK X-RAYS SPEER -0400  
 -RVS 200 LEFT OFFEROLET



CHAMILL NECK #2 FILTERS: CH. CL403 1900

PEAK DATA: 345.43 N @ 150.00 MS; -436.71 N @ 163.56 MS

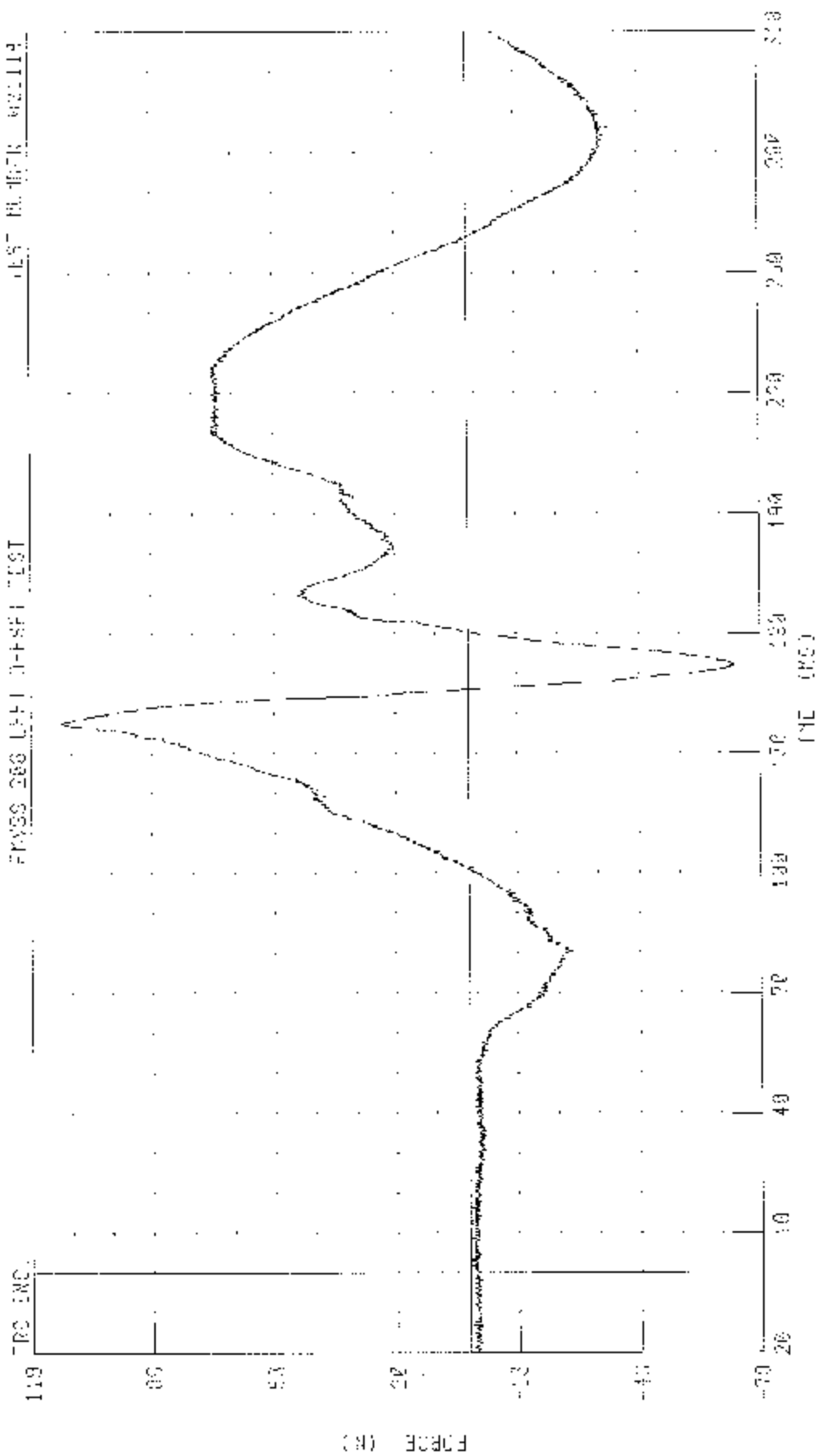


039124 - 2003 CUMULIET SUBURBAN 1500 2WD

RICH FRONT PASSENGER WHEEL X AXIS SPEED -INCH

PRESS 288 LBS 0-100 PSI TEST

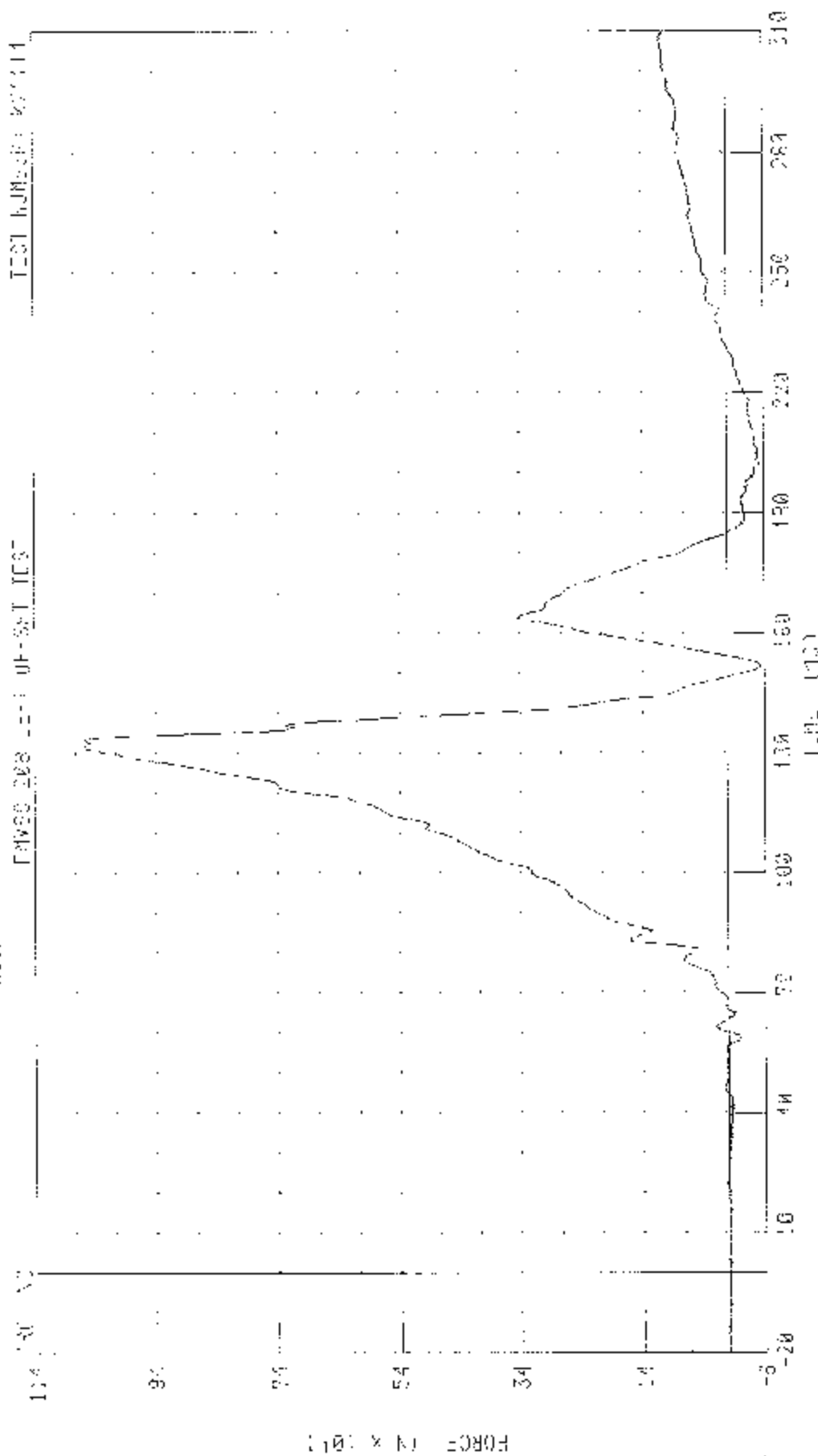
TEST NUMBER 002112



CHANNEL: ALKY-2 FILTER: 02 CLASS 1000

PEAK DATA 111.13 N @ 133.00 MS, -71.95 N @ 192.00 MS

070104 / 2223 CHEVROLET SUBURBAN 1500 2WD  
RIGHT FRONT - REAR WHEEL Z-AXIS AXIAL FORCE



CHANNEL: VER7F2 FILE: 001 CLASS: 1002

PEAK DATA: 100.2V N @ 131.84 MS, 14.30 N @ 152.88 MS

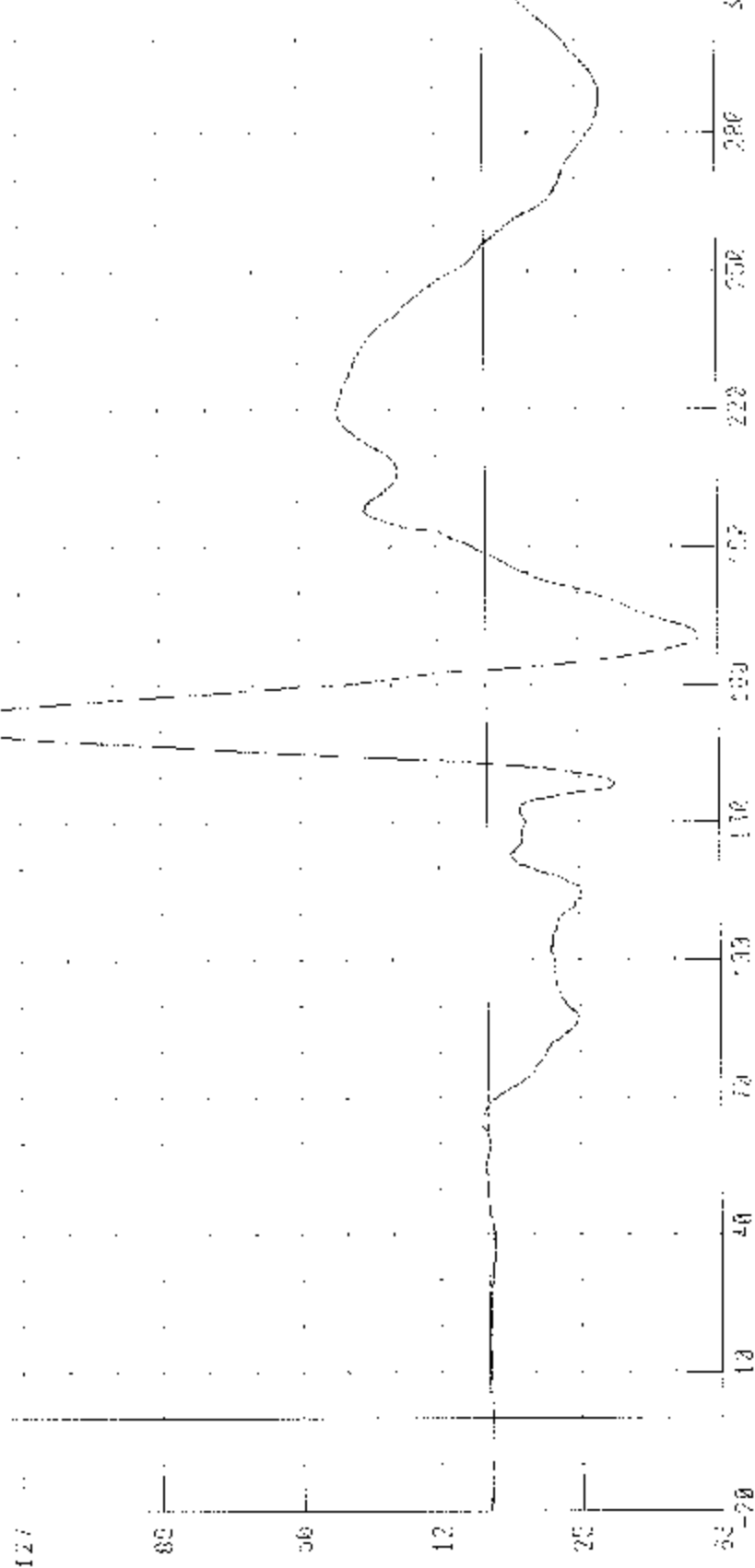
LSM104 / 2500 CHEVROLET SUBURBAN 1992 200

RIGHT FRONT POWER-NGER RECK. MOUNT. ABOUT 17X18

FWISS 200 111 OFFSET 1201

180 180 INC.

180 180 DLY 071102



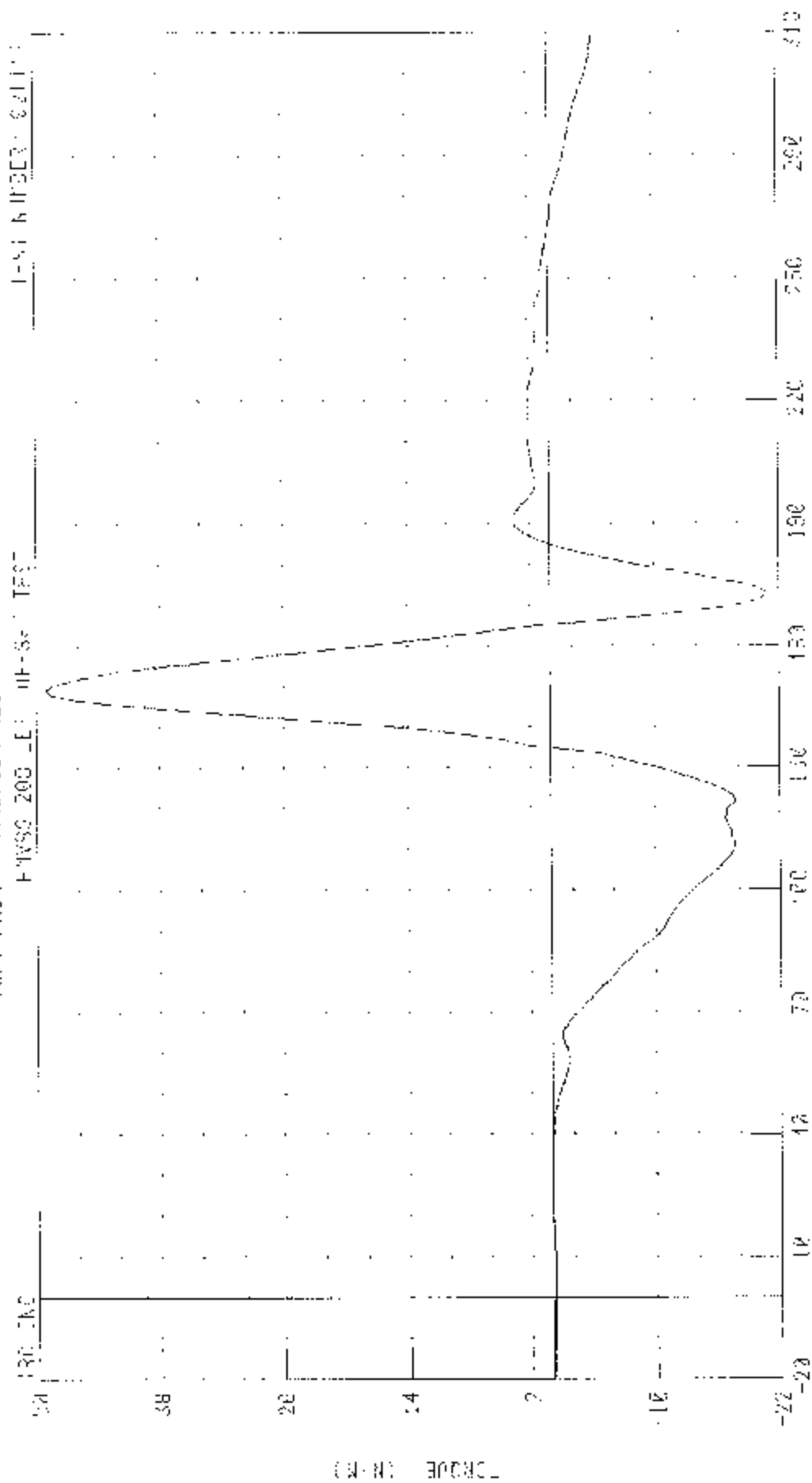
FWISS 200 111 OFFSET 1201

180 (180)

PEAK DATA 10.10 1 0 101.02 MS; -5.86 N-T 0.07E 4E 13

CHANNEL 4-KK2 11.00 0- 01.00 030

UNIT 04 / 2003 CHEVROLET CLIPJUMP 1530 241  
 RIGHT TURN PASSENGER SEAT FOOTWELL LIGHT VOLTAGE

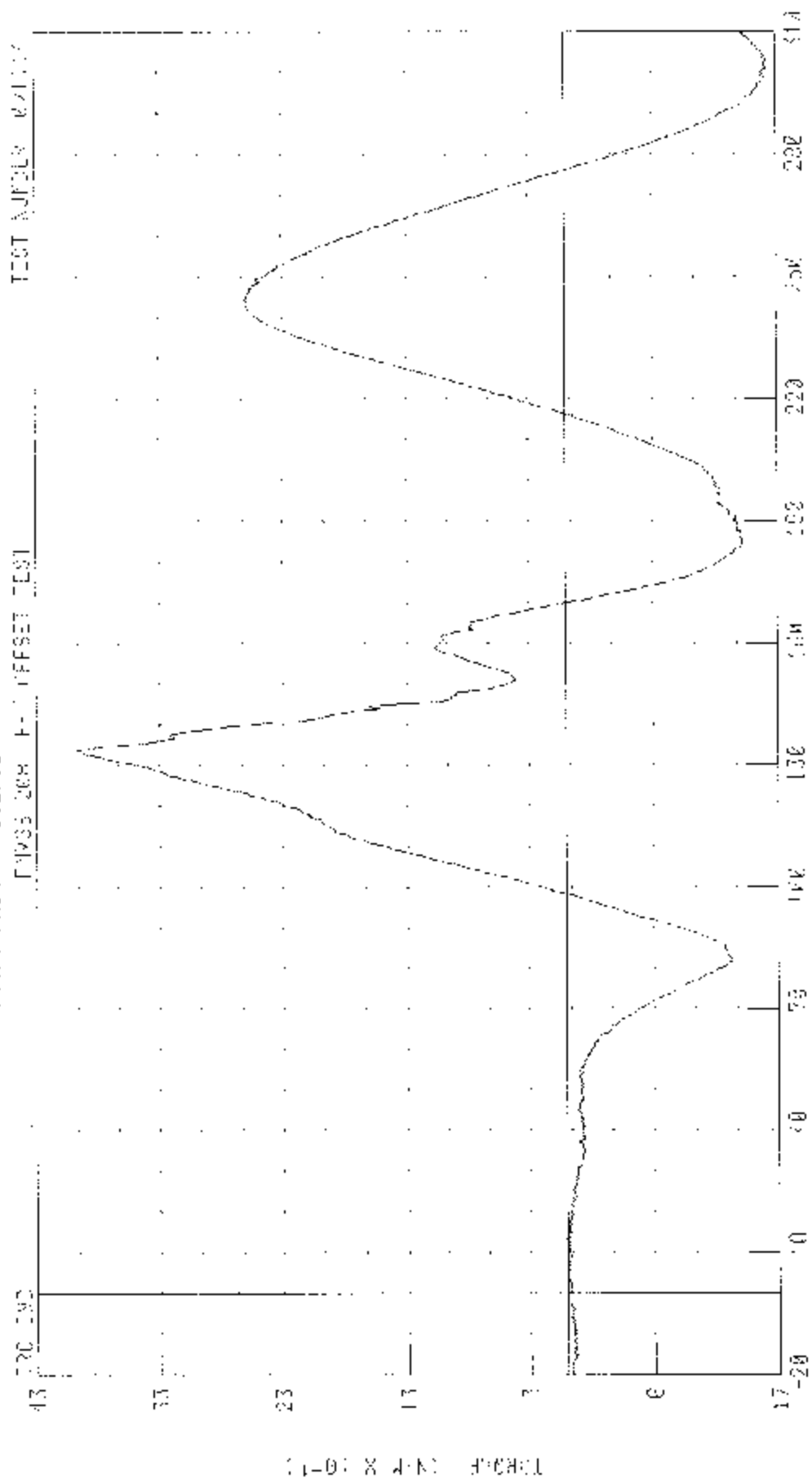


TIME (MS)

CHANNEL WFKY17 FILTER: 50H CLASS: 6004

PLAY DATA 48 98 4 8 0 140 30 15: 22.72 N 1 M 172 00 15

230104 / 2000 OFFSHORE / SIZELAND 2500 2.1  
 RIGHT FRONT PASSENGER AREA "MTHA" ABOUT 2 1/2"

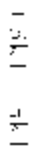


CHUNK1 - VLK272 11 TFR - C- CLASS 290  
 FLUX DATA 3.88 4 1 0 1.3 70 50 1 33 N N 0 201 84 100

1000

1571 176-6 14-1 582 524-1

1000

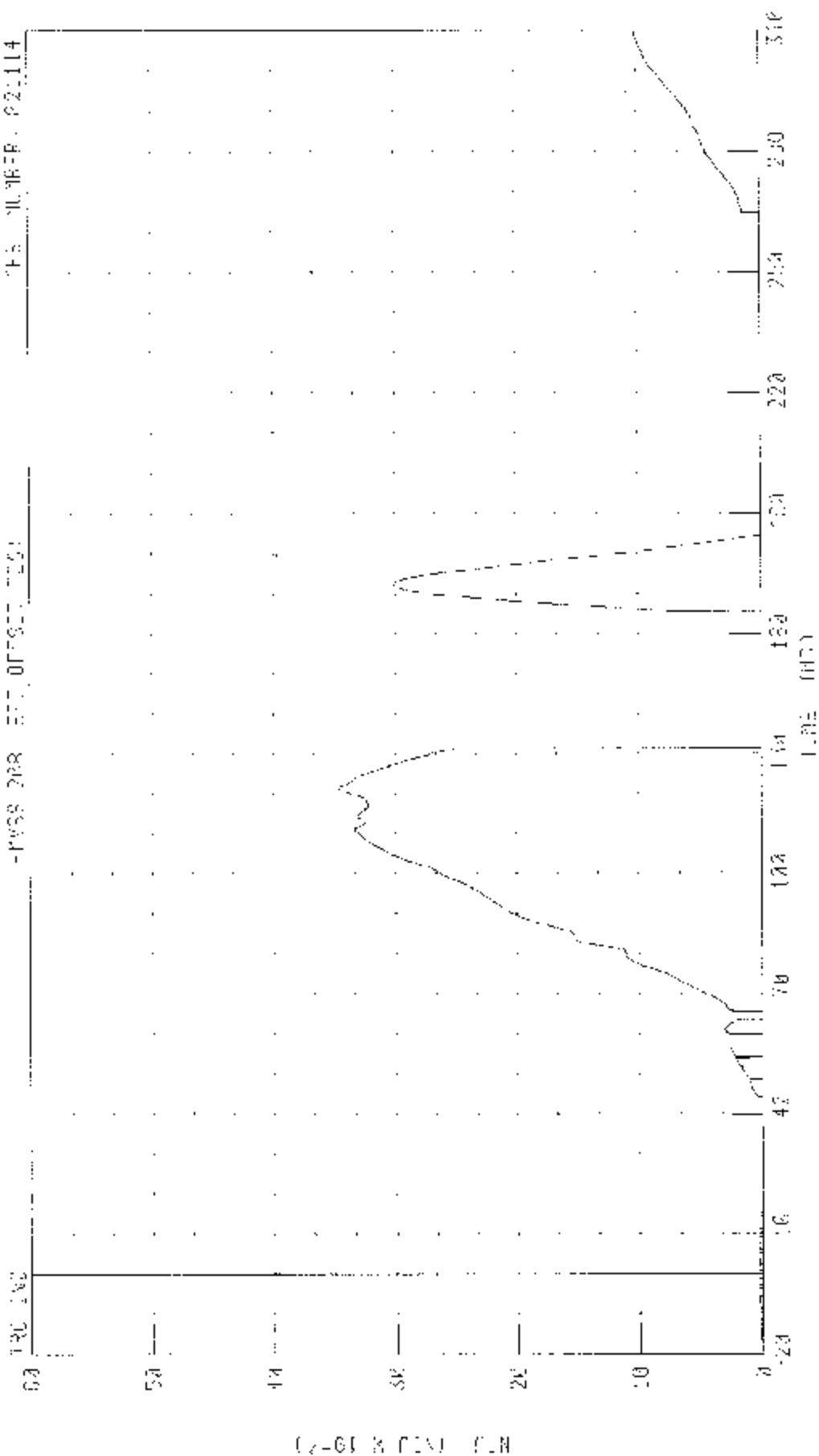

$$0_2 \otimes K^{\frac{1}{2}} \oplus \overline{K}^{\frac{1}{2}} \oplus \dots \oplus K^{\frac{n-1}{2}} \oplus \overline{K}^{\frac{n-1}{2}}$$

20121 / 2003 CLEVELAND SUBURBAN 1500 2W

RIGHT TURN PASS-NGR ALL -ENCLOSURE EXTENSION

-PASS 208 877 OFFSET 221

FILE NUMBER: 021114



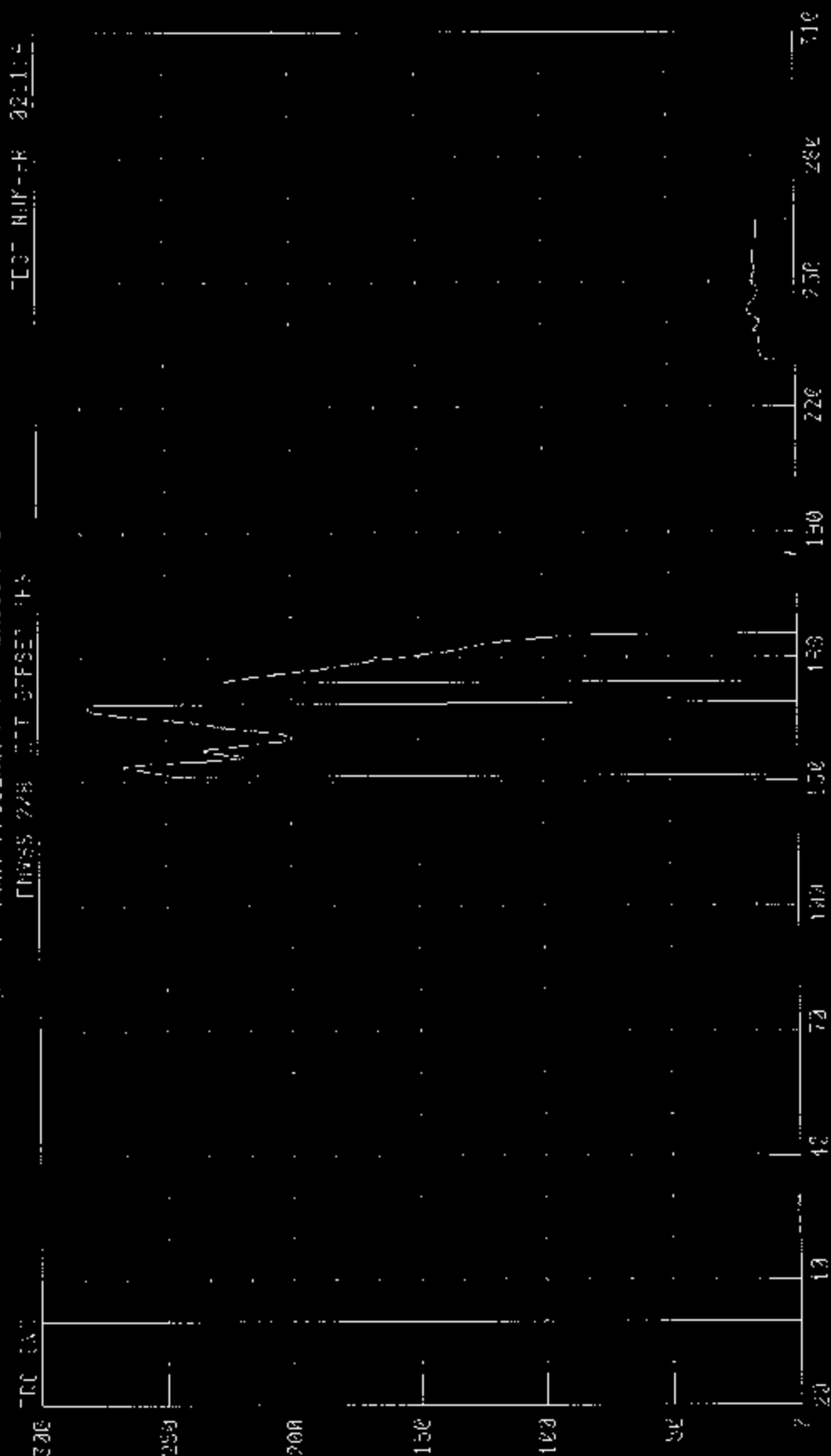
CANAL MFP2 -FILTER: GIL, GLOSS 620

877X 703P 9 00 NJ 6 101 60 PS 0.00 NJ 6 -20 00 15

C20104 / 2221.44-V50-ET SUBURBAN 1000 29F  
 B L-1 PECHT PRESSURE 45 TENCIO 40-1-100K

TC- RHP-R 02:11.5

THSS 278 TIT 37521 45



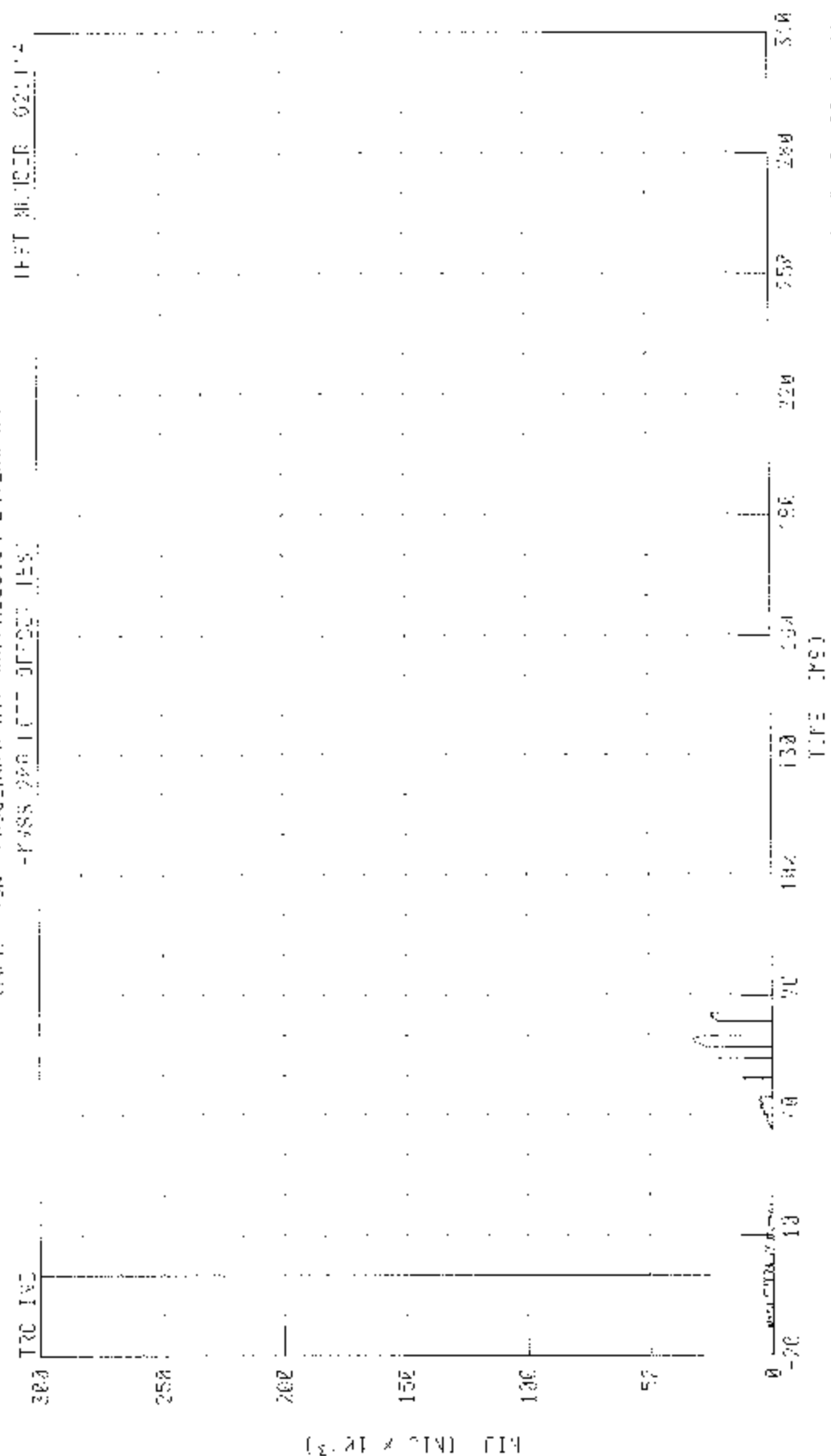
TIT (MS)

PEAK DATA 6 08 513 6 14 02 15: 0 08 513 6 14 02 15

CHANNEL 472 FILTER CH CLASS 000



730104 / 2003 MIDDLE SLEWING 1040 240  
 RIGHT FROM PRESSURE AT DIFFERENTIALS ON  
 -PASS 200 177 OFFSET 155



CHANNEL: R012 FILTER: CH 0.000

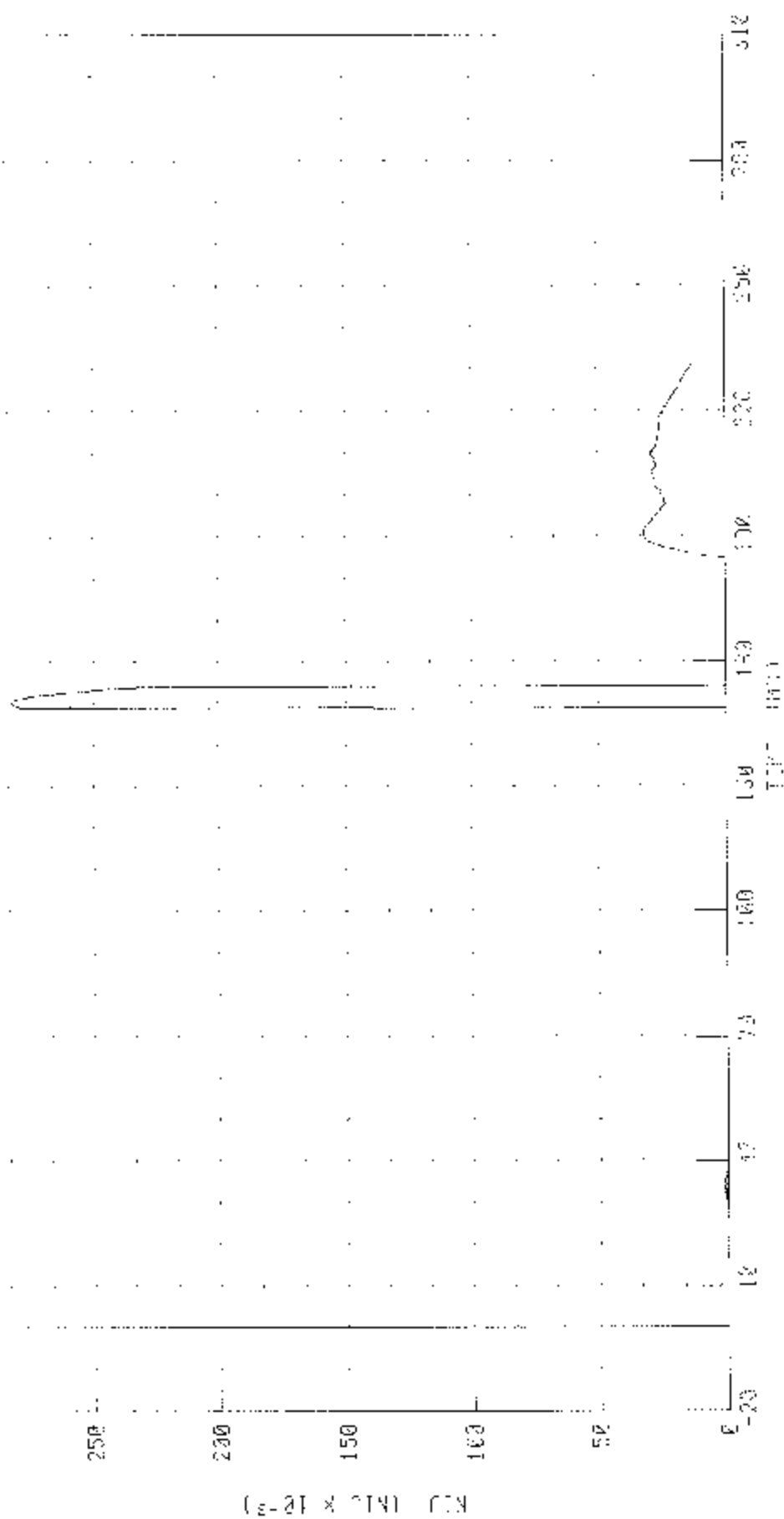
TIME (MS)

182 190 198 206 214 222 230 238 246 254 262 270 278 286 294 302 310

070104 / 2003 CHEVROLET SUBURBAN 1500 2WD  
 VIN# 1G00140000000000000000000000000000  
 TRUCK 2003 F-150 3.5L V6 TEST

TEST NUMBER 021114

TRUCK INC.



CHANNEL NO. 2 FILTER: CH LASS 000 F-000 0014 0.20 N/A 0 150.40 15.0 0.00 N/A 2 -19.30 10

$$\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = \int_{\mathbb{R}^n} u \Delta u dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx$$


PLATE 116. 30 E. 333 E. 30 E. 30 E. 30 E.

230204 2003 CRYVALLE SUBURBAN 1300 200  
 210 BT FROM 20030401 1400 Y 0000 140004  
 21000 200 1400 0000 140

1201 14000 020114

140 140



TIME (SEC)

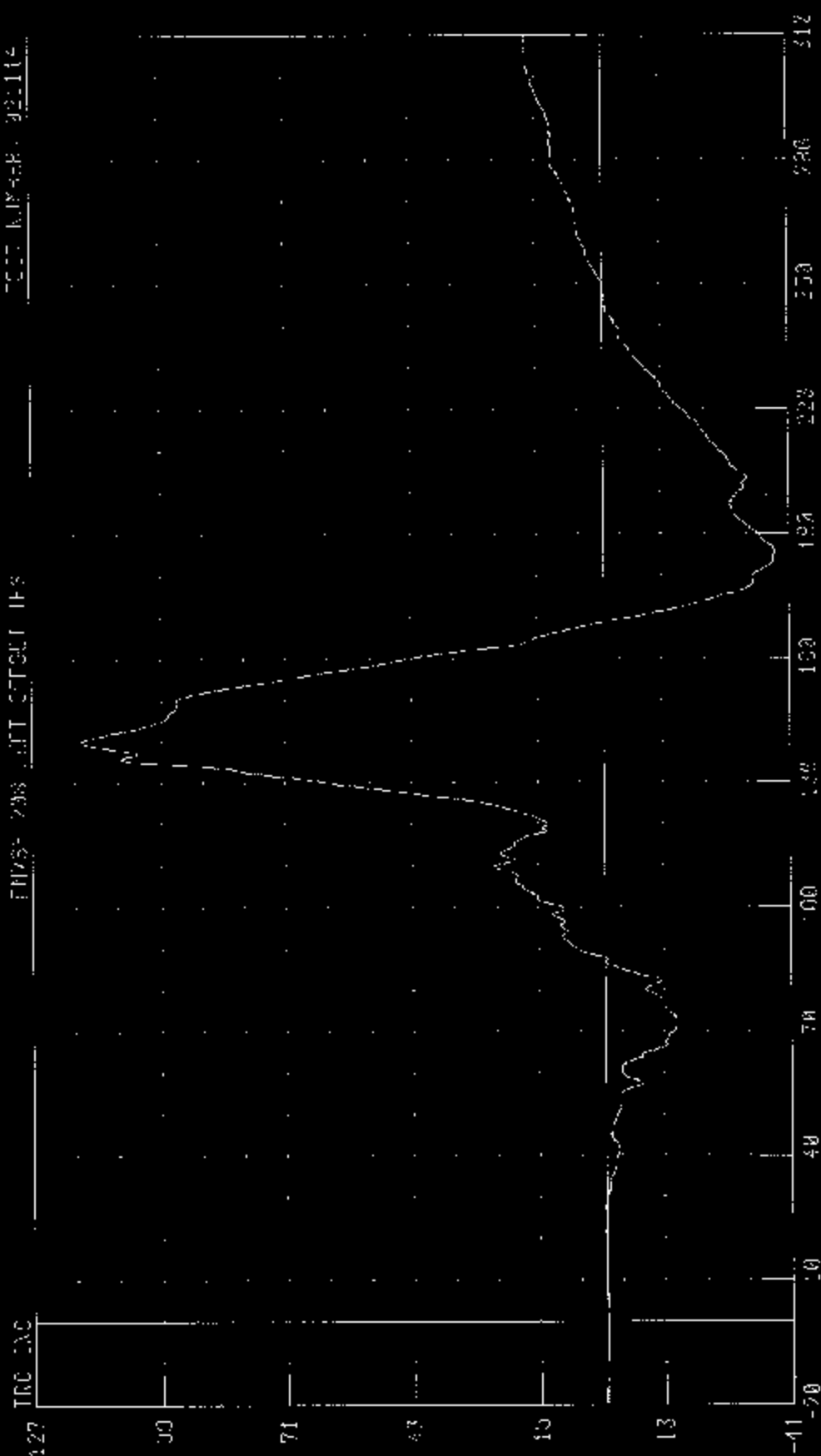
PEAK DATA 4 10 0 0 151 76 14 9 0 0 0 220 18 18

GRAPH: 03TY02 FILTER: 0- 11400 150

200717 2333 CHEVROLET C300000A 1500 240  
 RICHIE LUCI P055F06-4 20057 Z-0418 P0000004 100

7017 K000000 200114

FM25- 238 JPT C75001 0FS



TIME (MIN)

CHANNEL 051/32 FILTER 02 0FS 150

PLAK 0410 11 05 05 142.00 MS: 0 75 0 0 185 84 240

000104 0 2223 01 000000 000000 000 000

R100 FRONT PROBE 0-450 RESOLUTION 0000000000

0000000000 000000

0000000000 000000

0000000000 000000



TIME (MS)

0000000000 000000 000000 000000

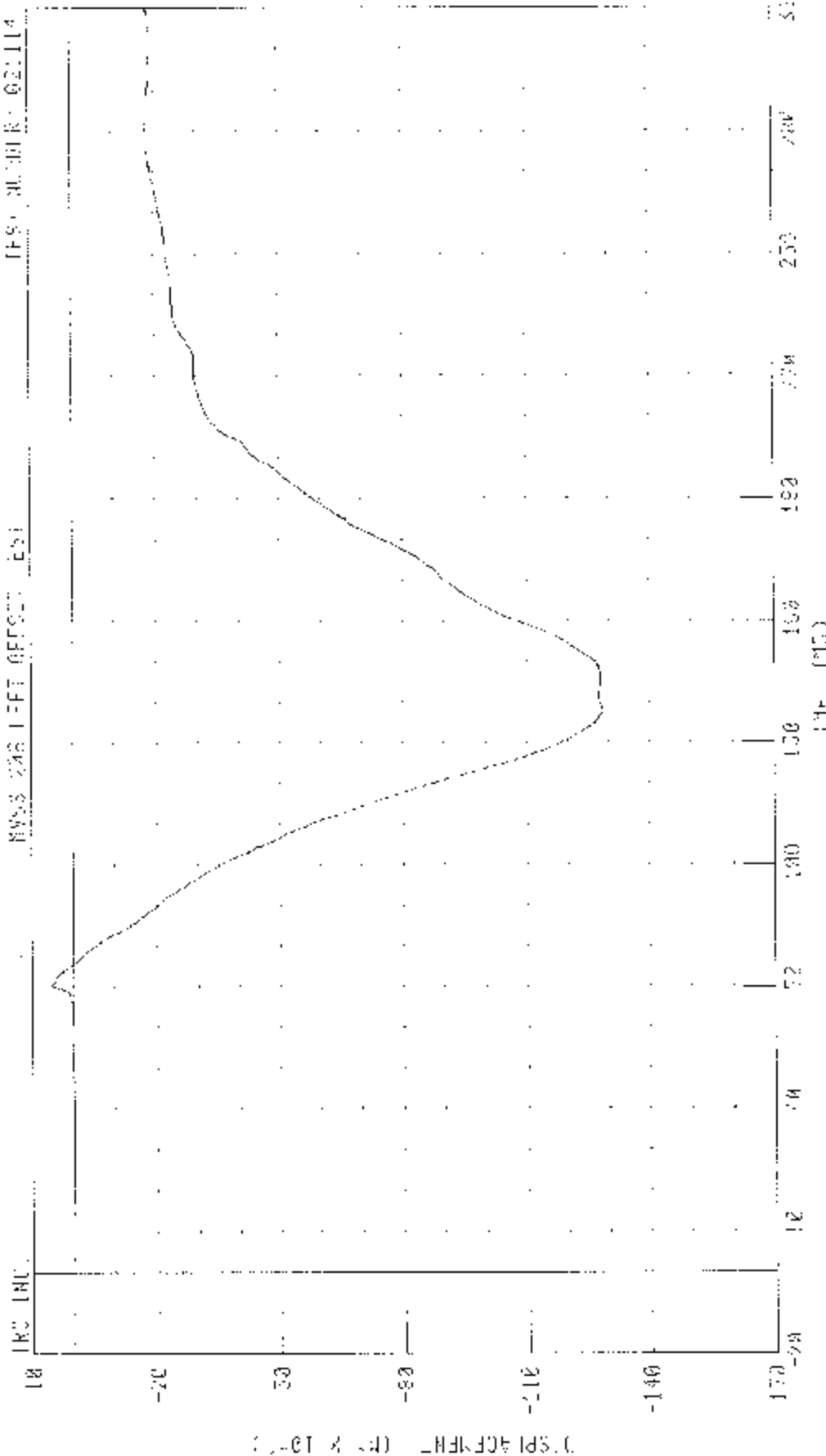
0000000000 000000 000000 000000

000124 2003 CLEVELAND SUPERBARK 1526 NM

ALPH 10.0" PASSENGER OPS COLLECTION

RVSS 248 LEFT OFFSET 251

IPS NUMBER 021114



PEAK 0.77 10.53 11.0 79.48 18.1 -17.05 11.0 137.84 18.5

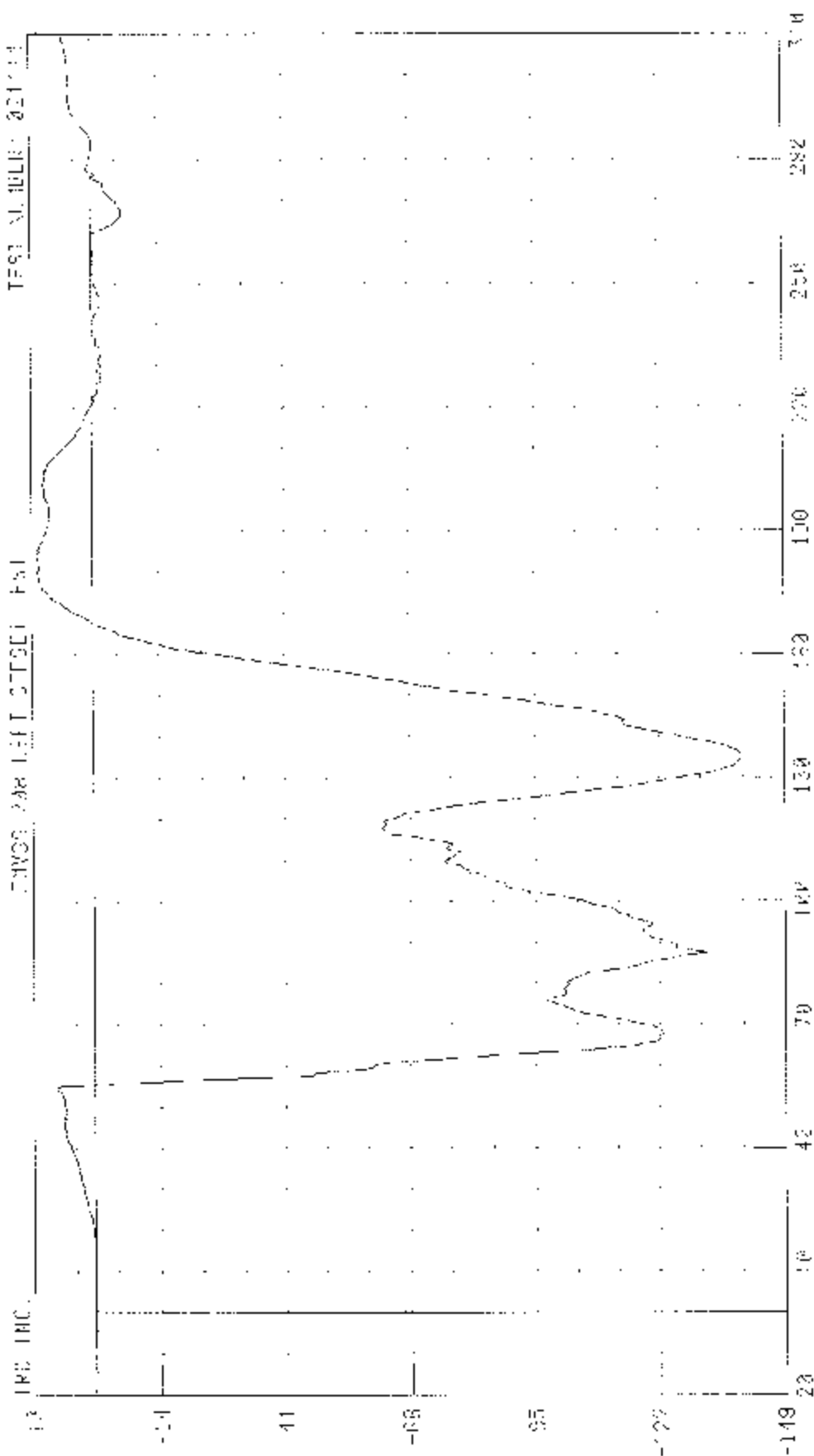
CHANNEL 03-AT2 -HIL3- C- 0.053 0.02

230104 / 2800 CHEVROLET SUBURBAN 1500 2WD

OUTPUT FROM PARACASER LEFT -- LHM FORCE

FORCE FOR LEFT STOEI PSI

TEST NUMBER 021111



TIME (MS)

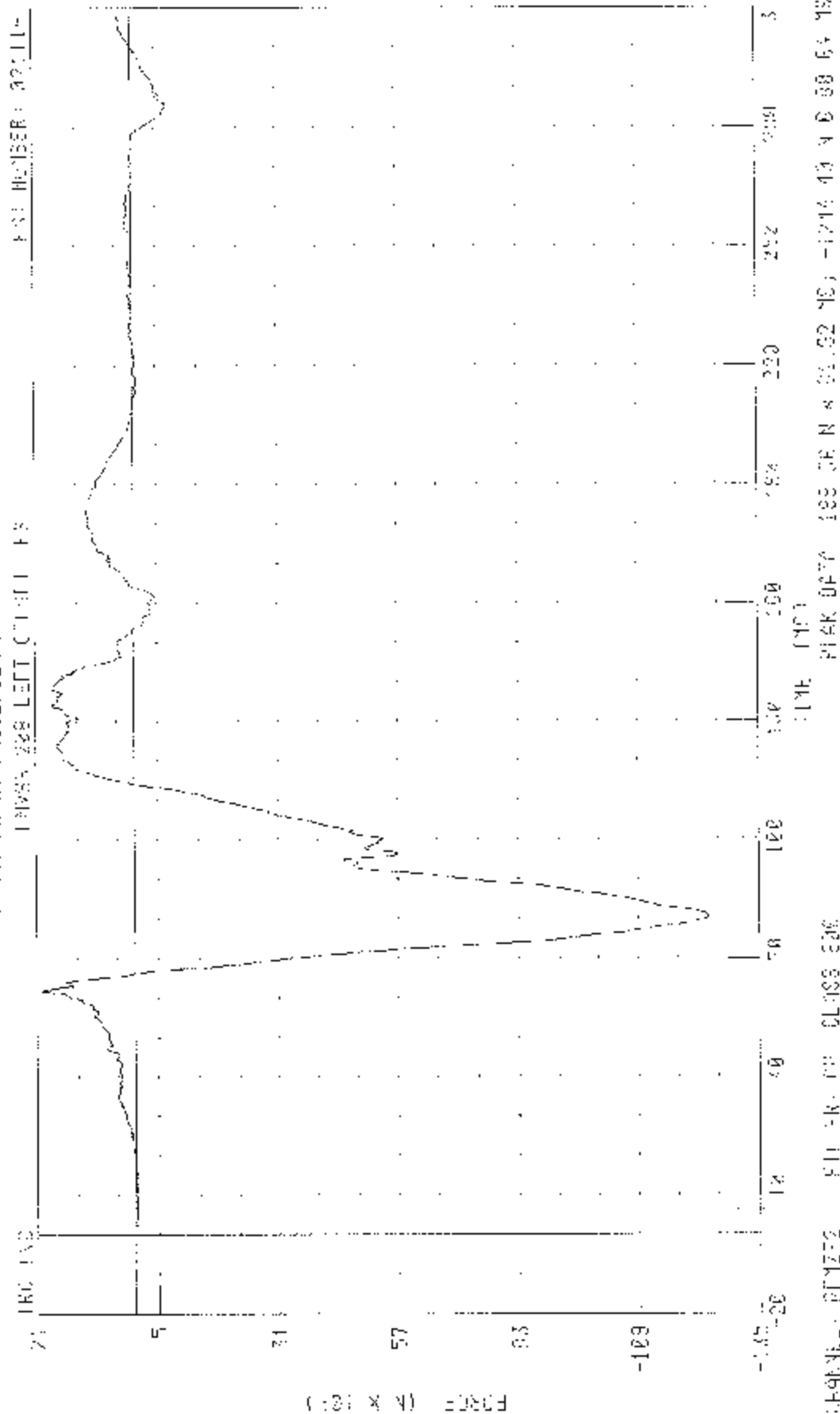
DETAILED P: 110.15 X 0.187 000 MS, 1357.67 N @ 164.72 MS

CHANNEL - PZT2 FILTER: 00. CLAS: 000

(12) X (1) 10001



030104 / 282 CHEVROLET CORVETTE 1968 STD  
 RIGHT FRONT PASSENGER RIGHT FRONT CORNER



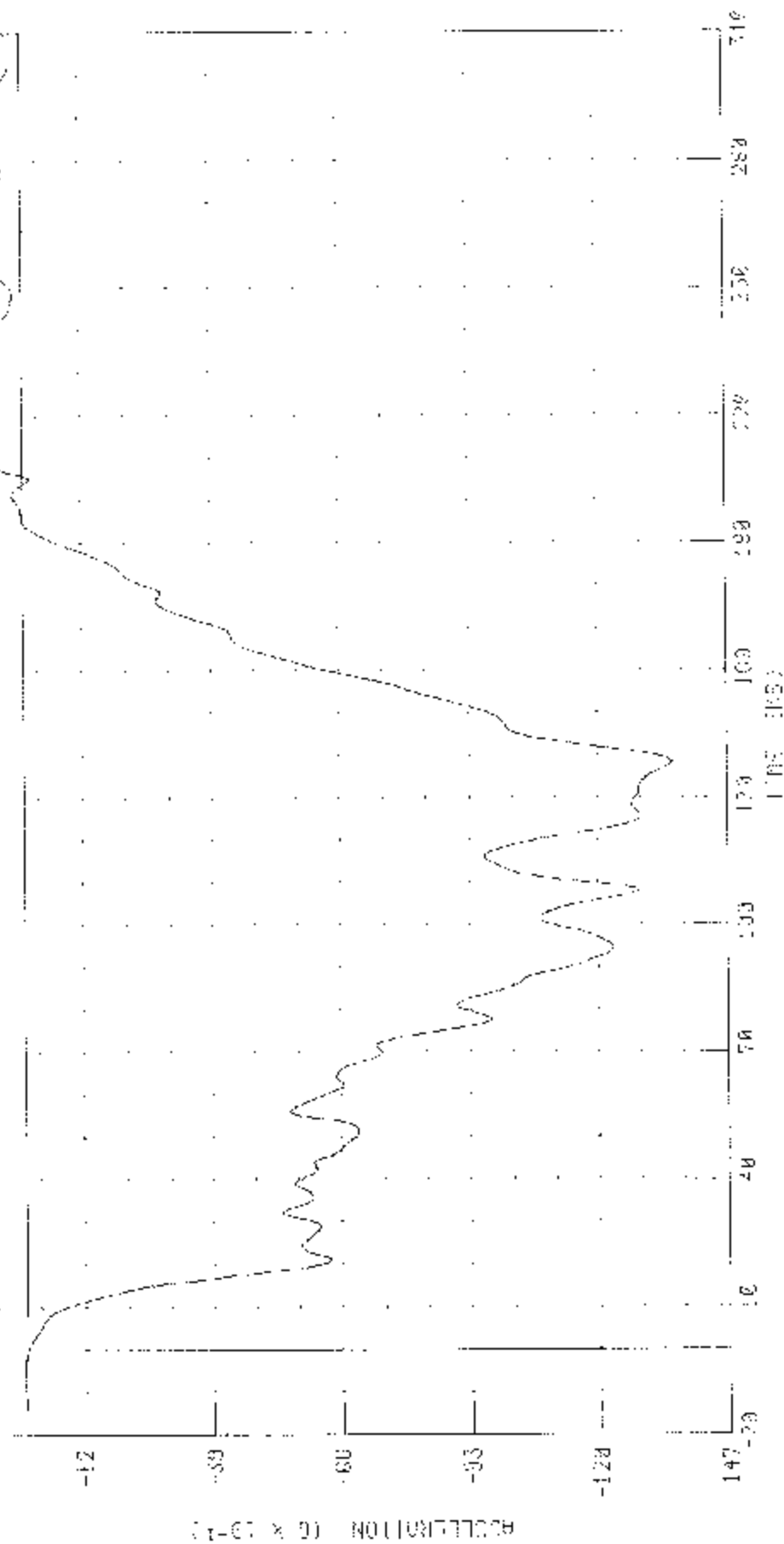
030104 / 2845 UIC92017 SL00004K 158.5 MB

LEFT BLK 84 CRUSCENERS A-AXIS ACCERFAH FOR

:FVS8 228 \_C\_\_ 04-5-1 1057

12 TRC IN2

TEST MEPLV 071114



CHUNK1 15850

FILTER: C- 01551A

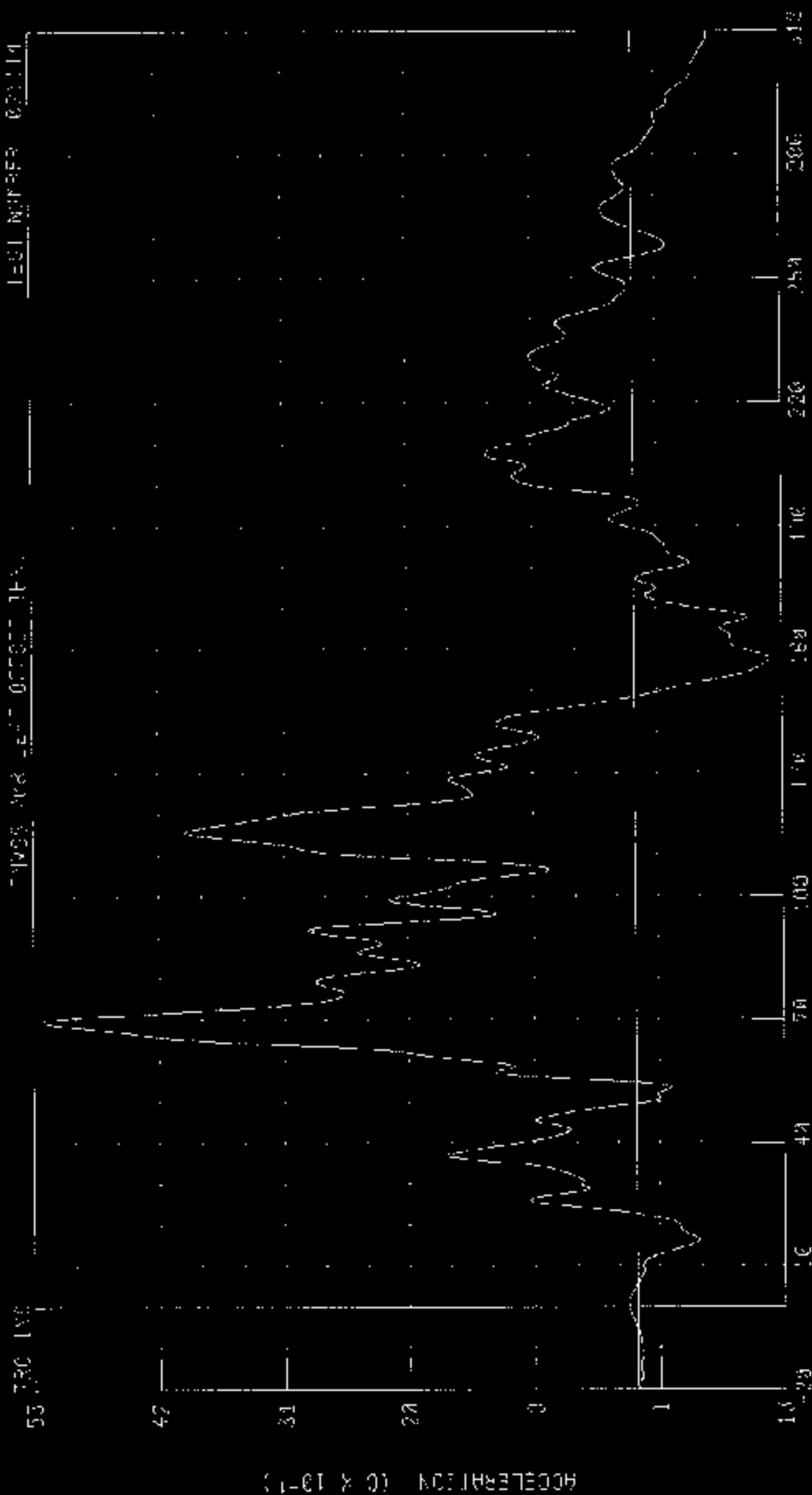
&gt;FAK 1410 112.36 222.03 153 -1.07 0.0 138.07 NS

041124 / 2005 04-20-11T 00:00:00.000 1570 731

LEFT REAR SHOCK PROBE INDC3 - 00000 4000 041104

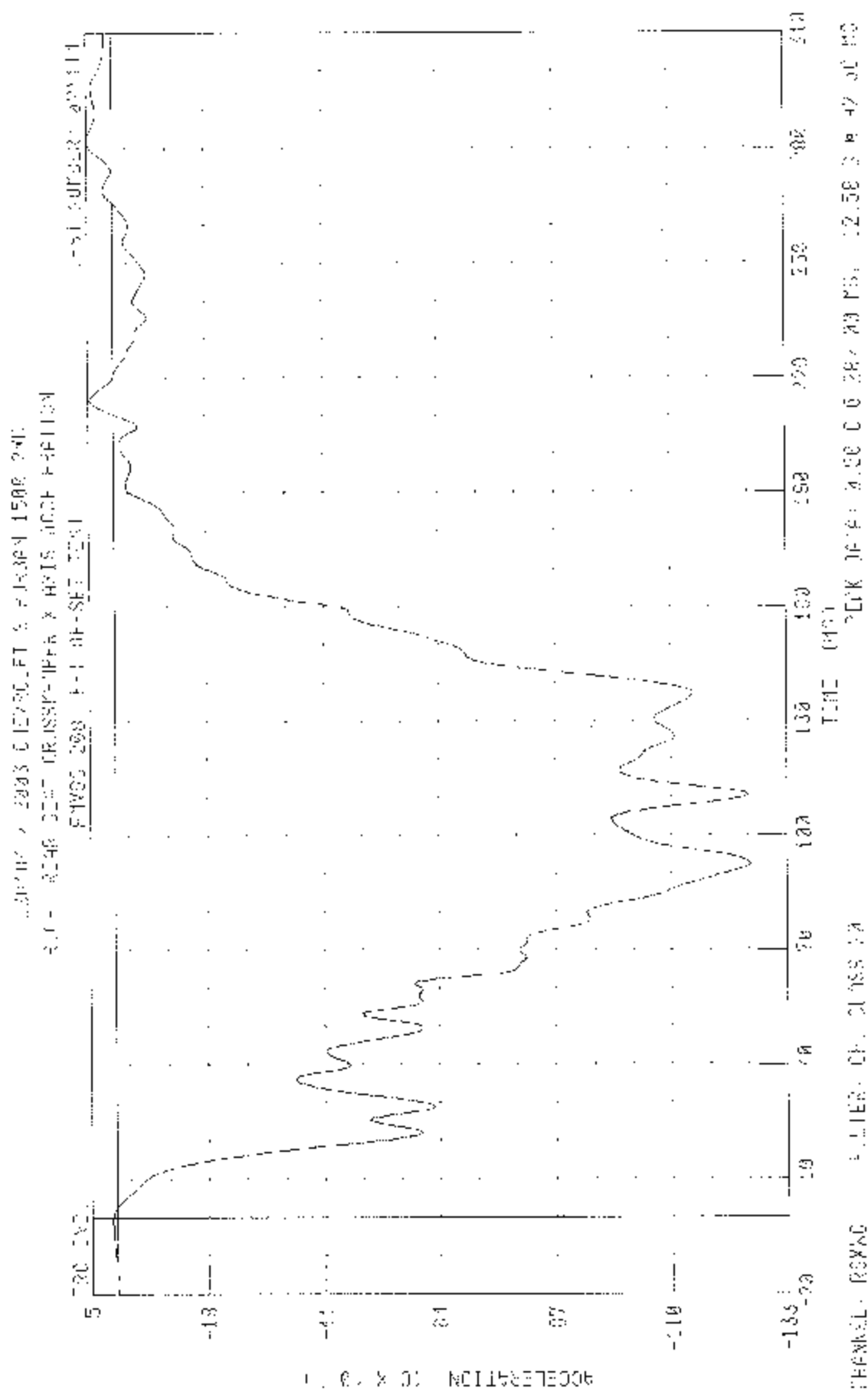
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LEU NUMBER 020114

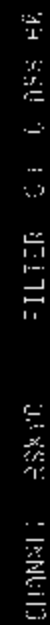


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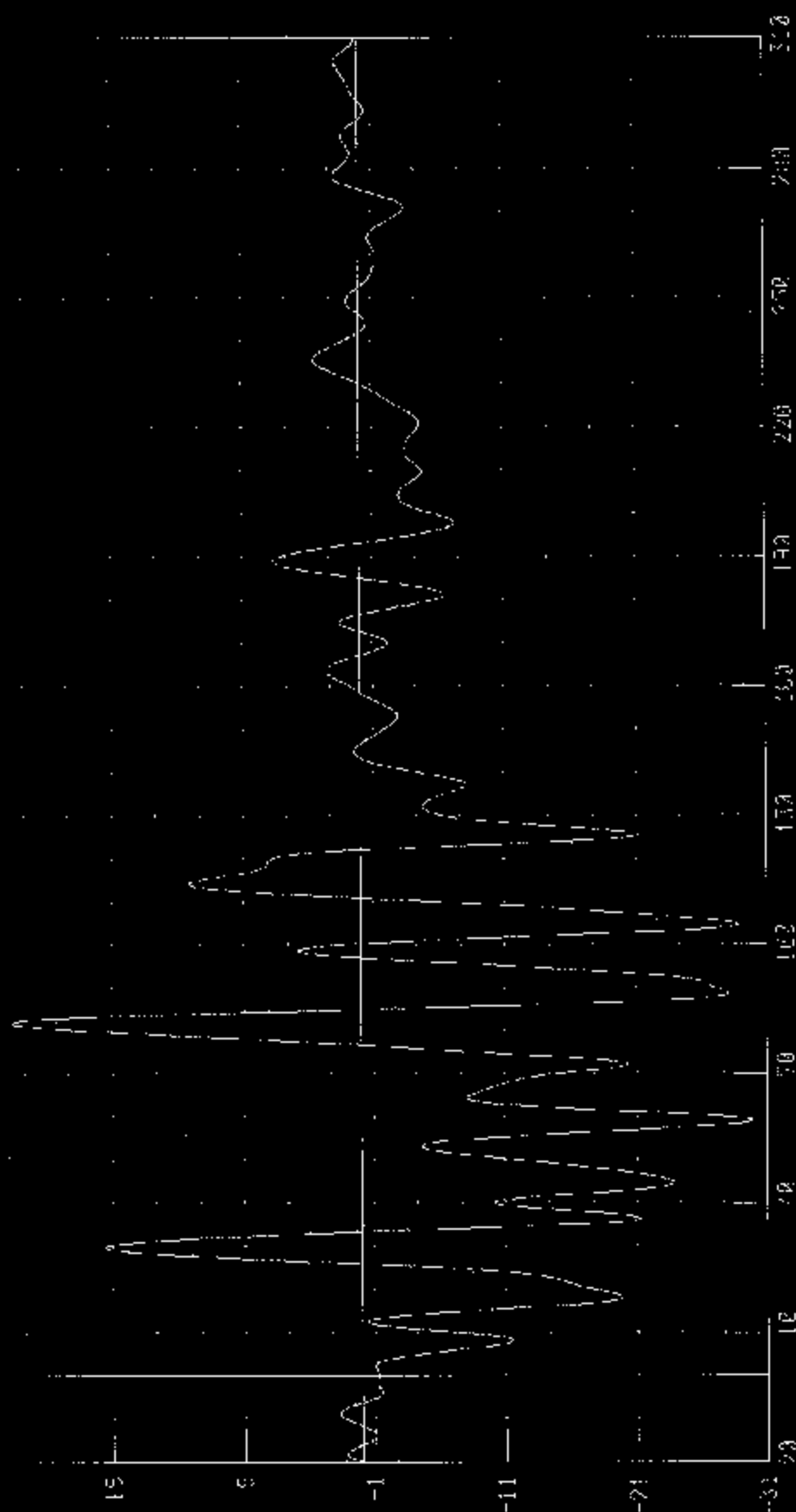
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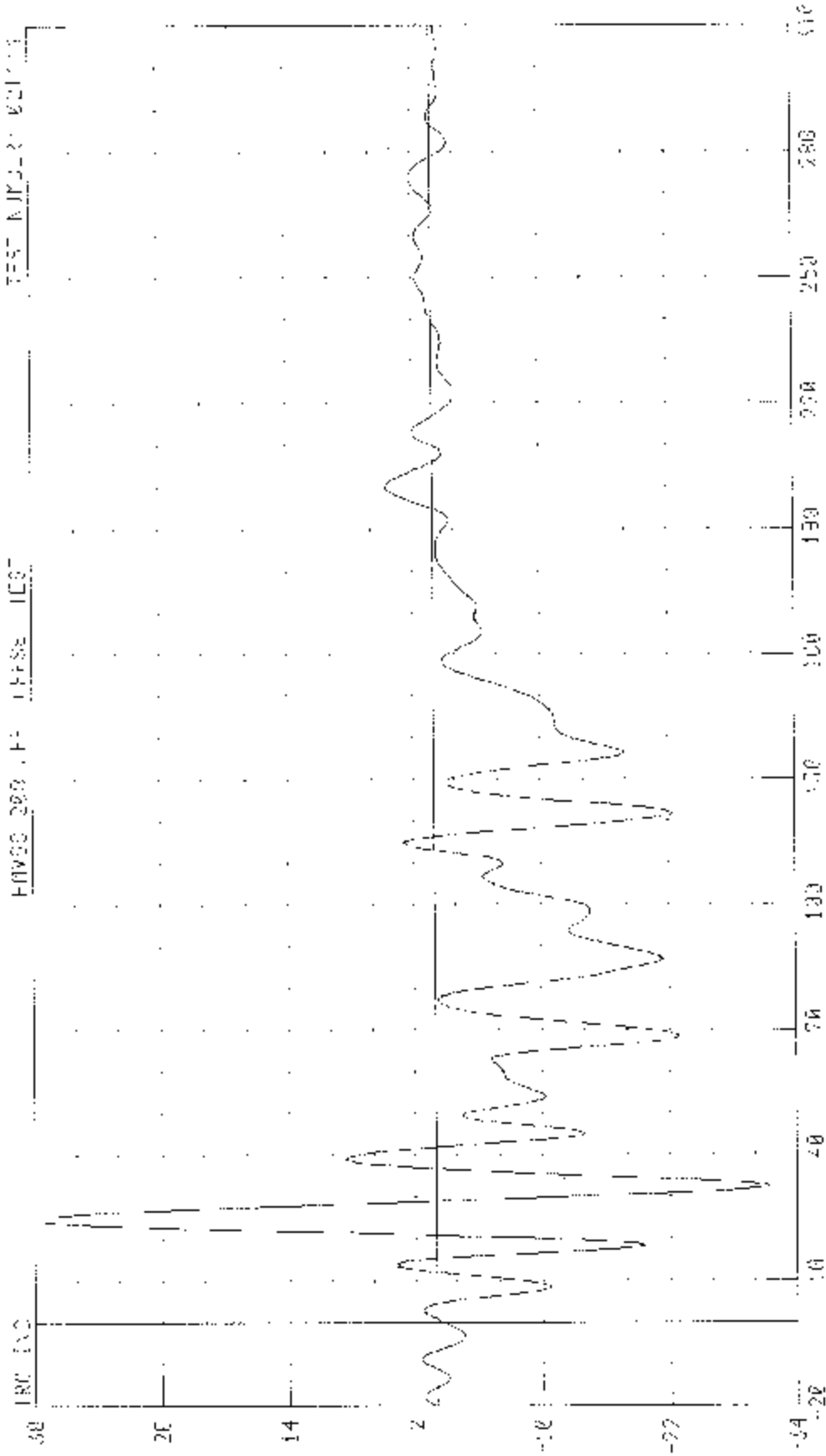
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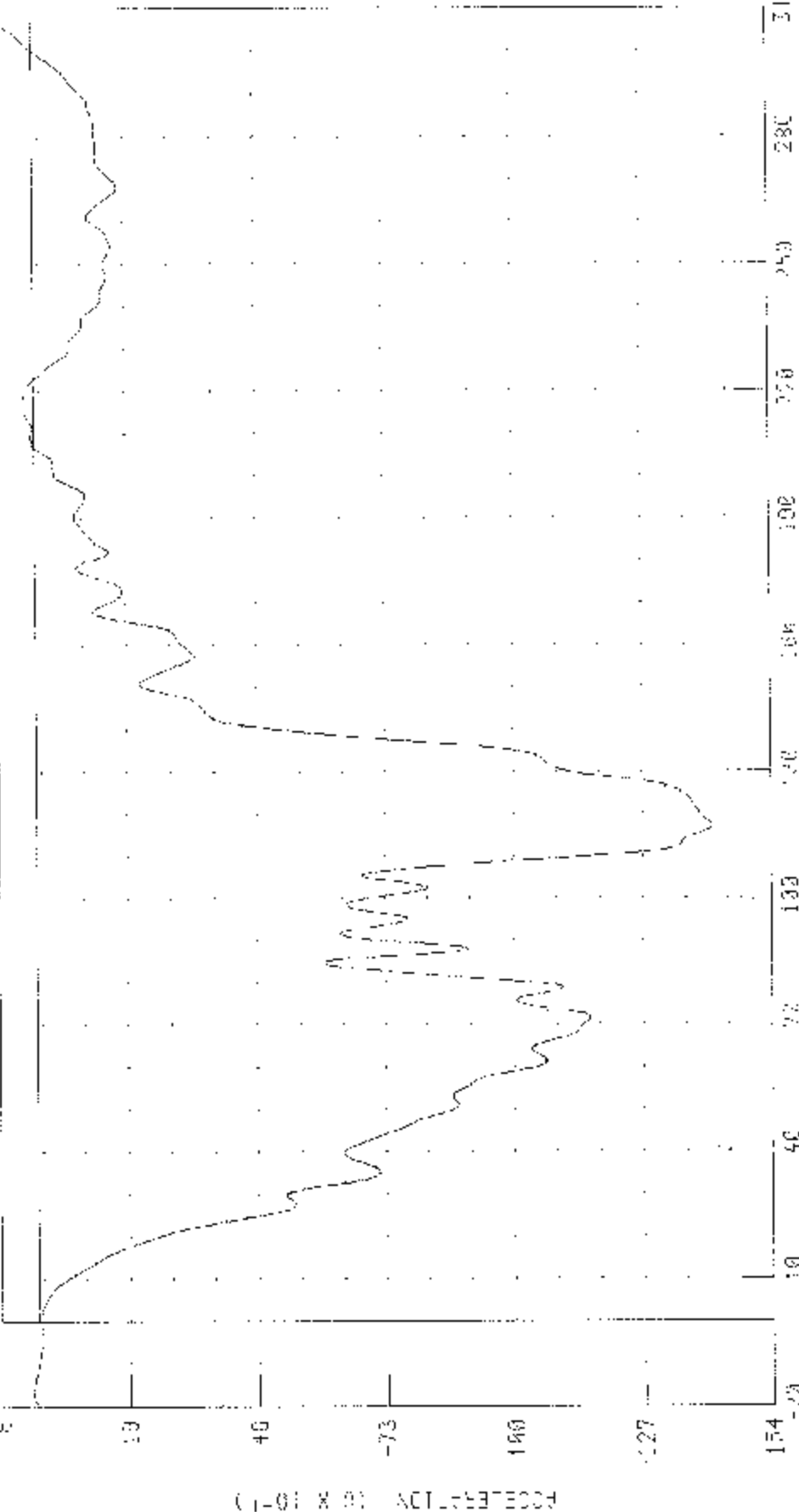
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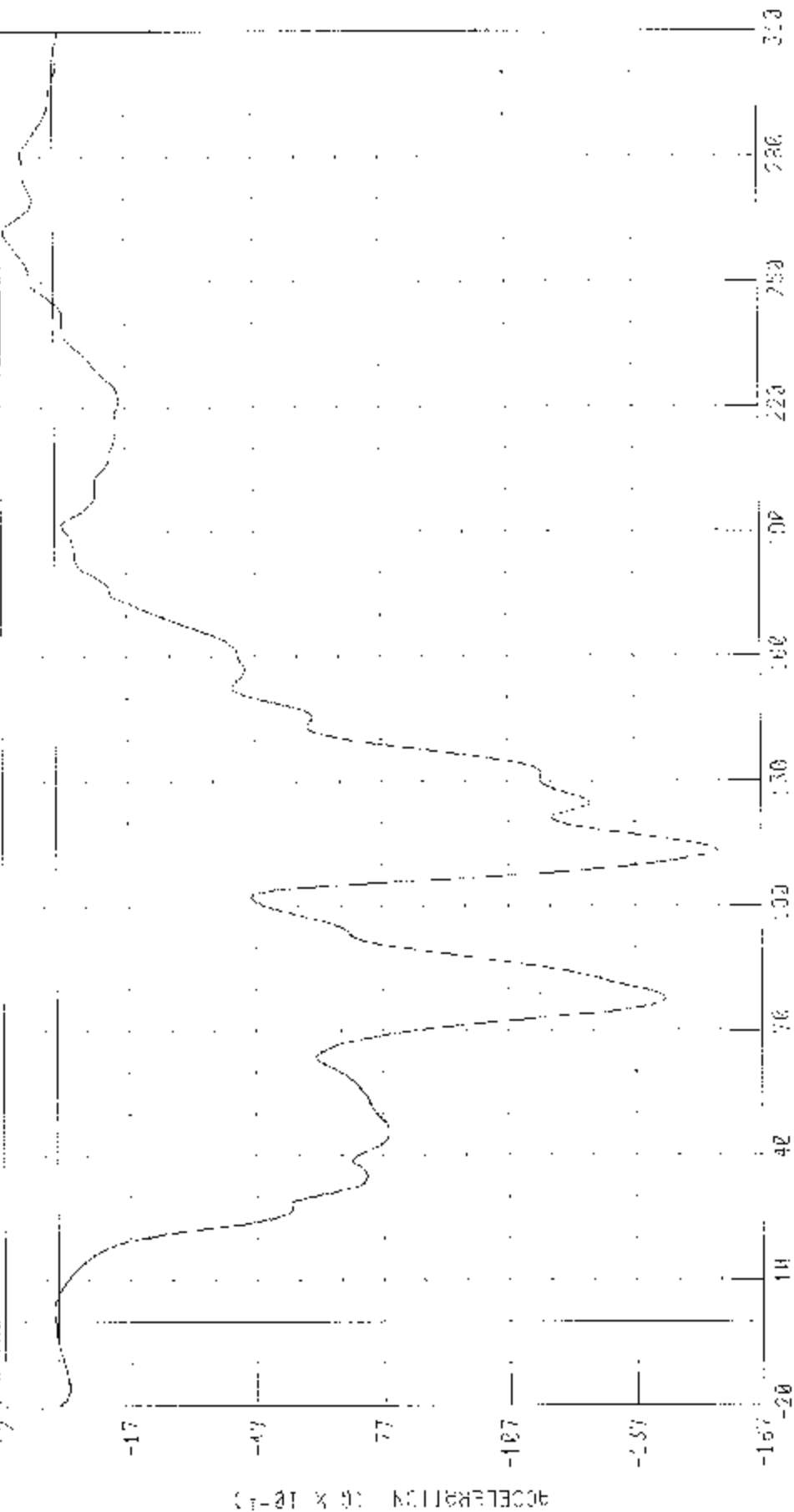
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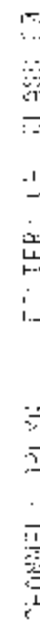


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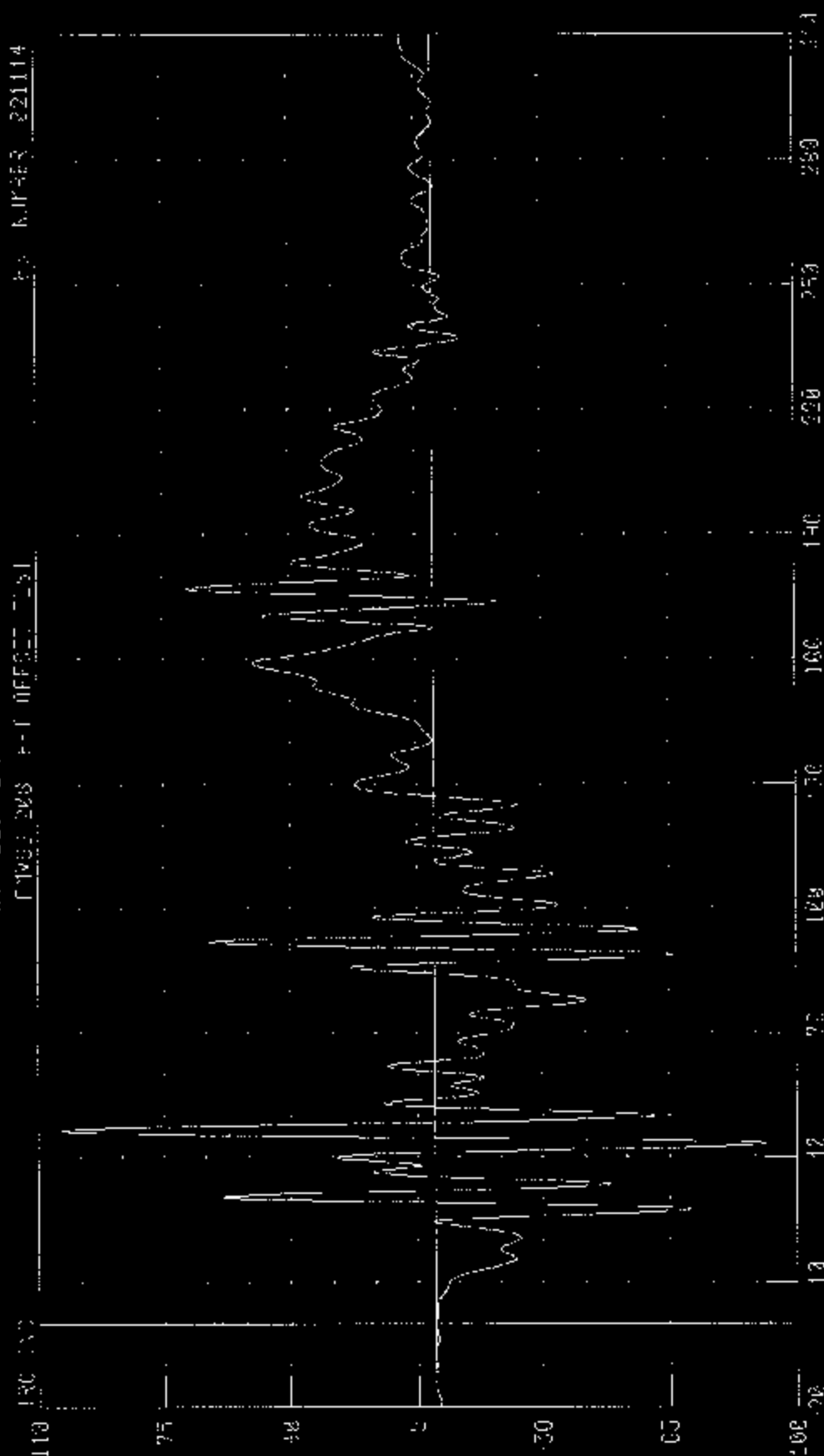
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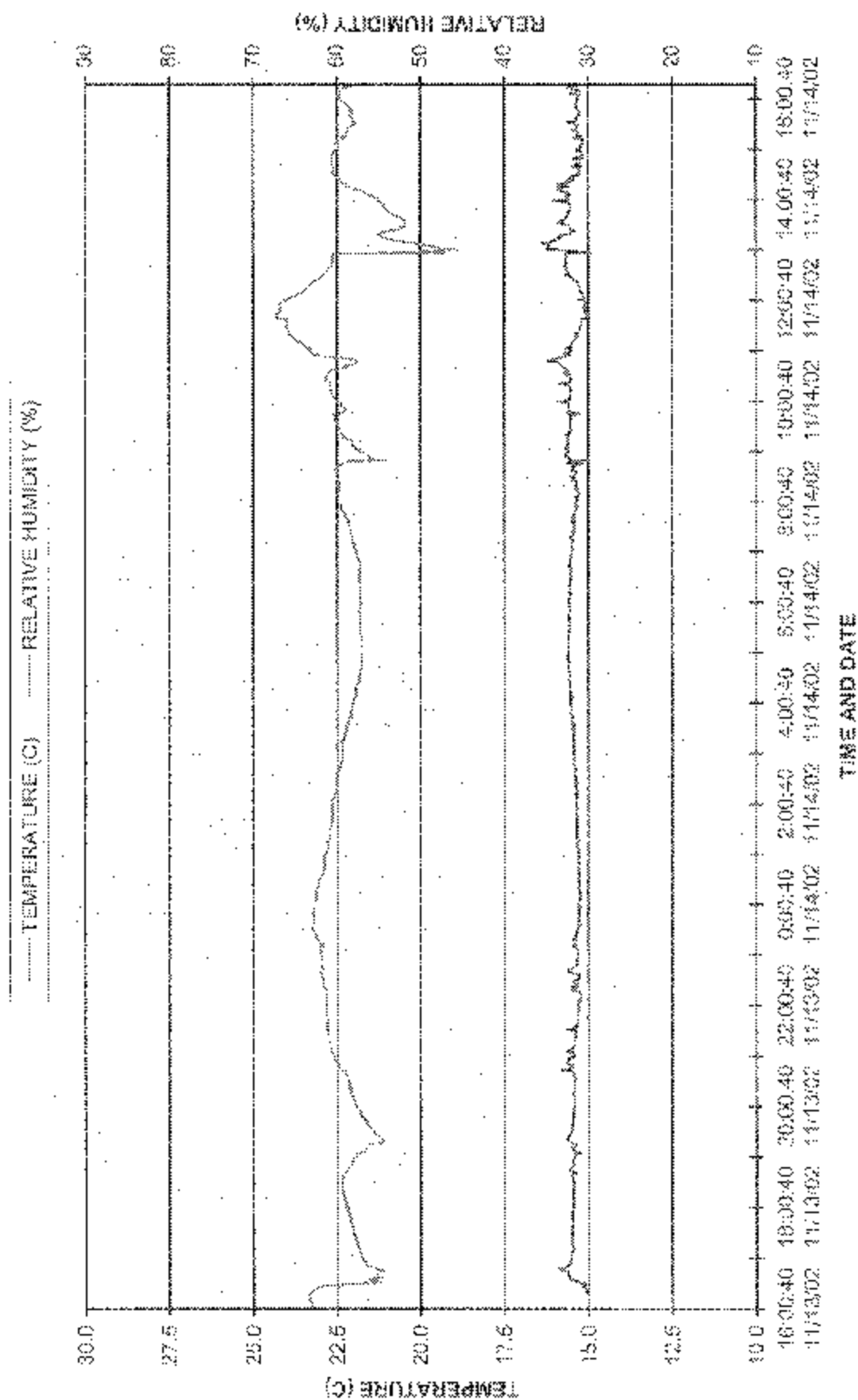
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## TEMPERATURE AND RELATIVE HUMIDITY CHART 021114



## Section 7

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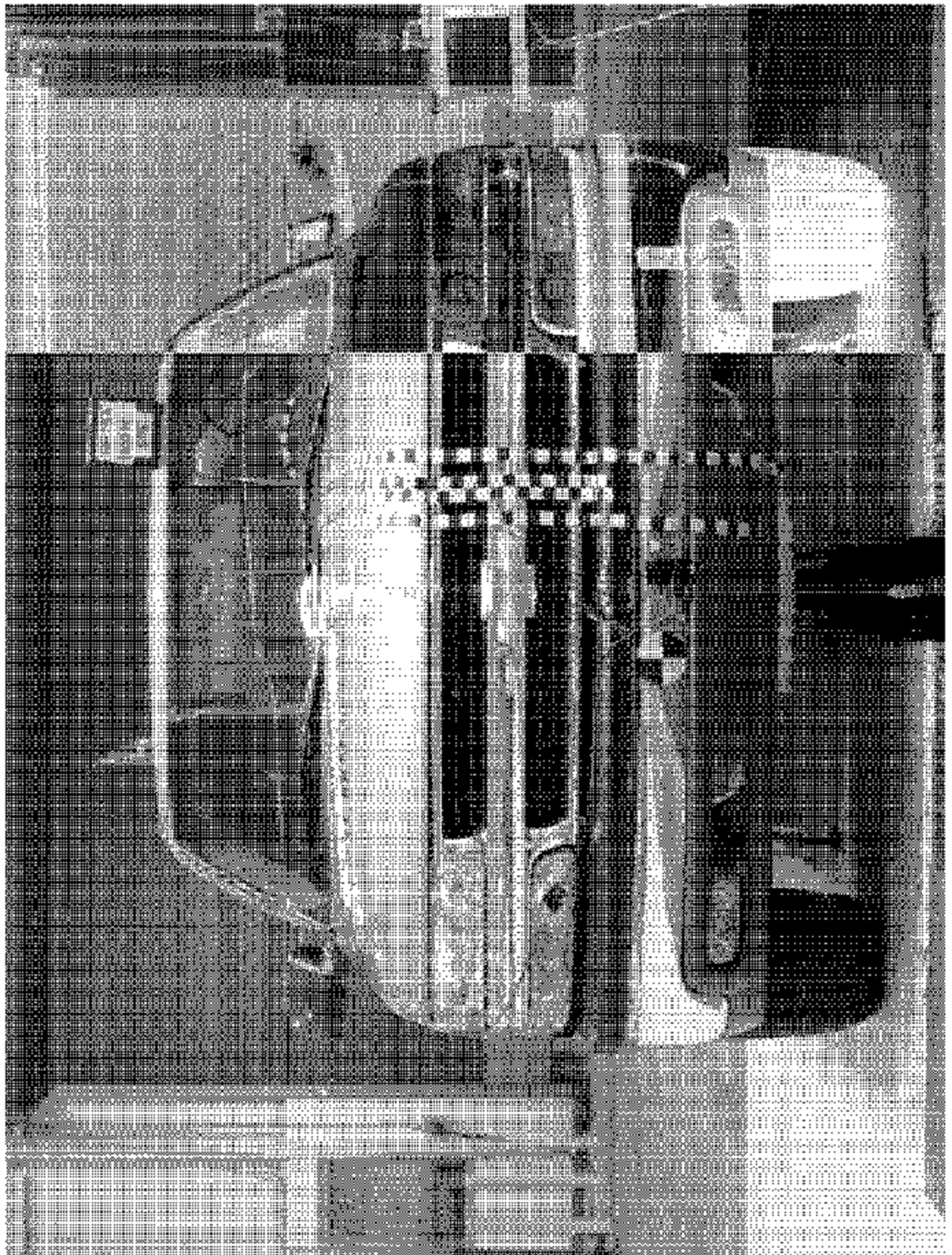


Image 1 Pre-Test Front View

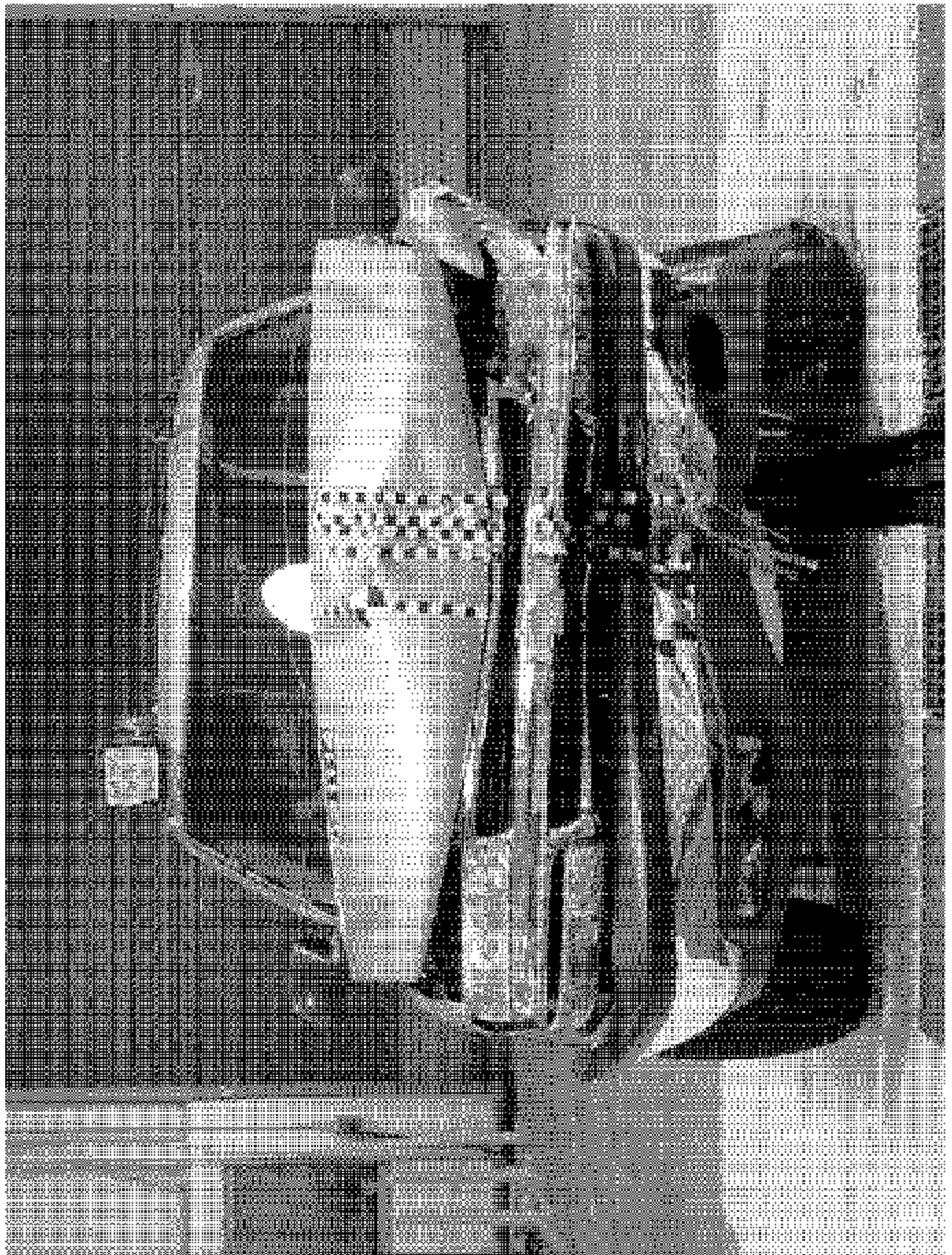


Image 2 Post-Test Front View

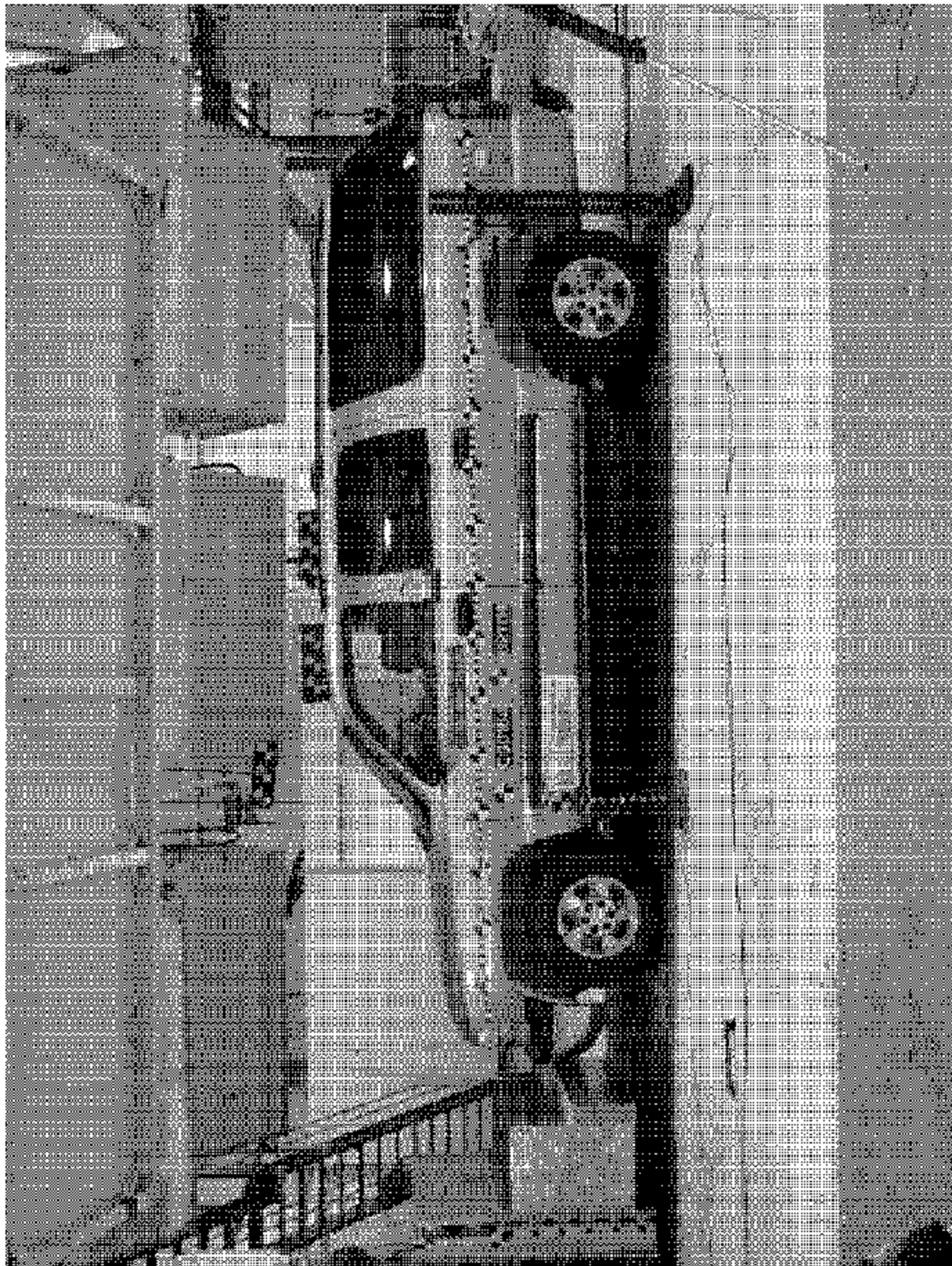


Image 3 Pre-Test Left Side View

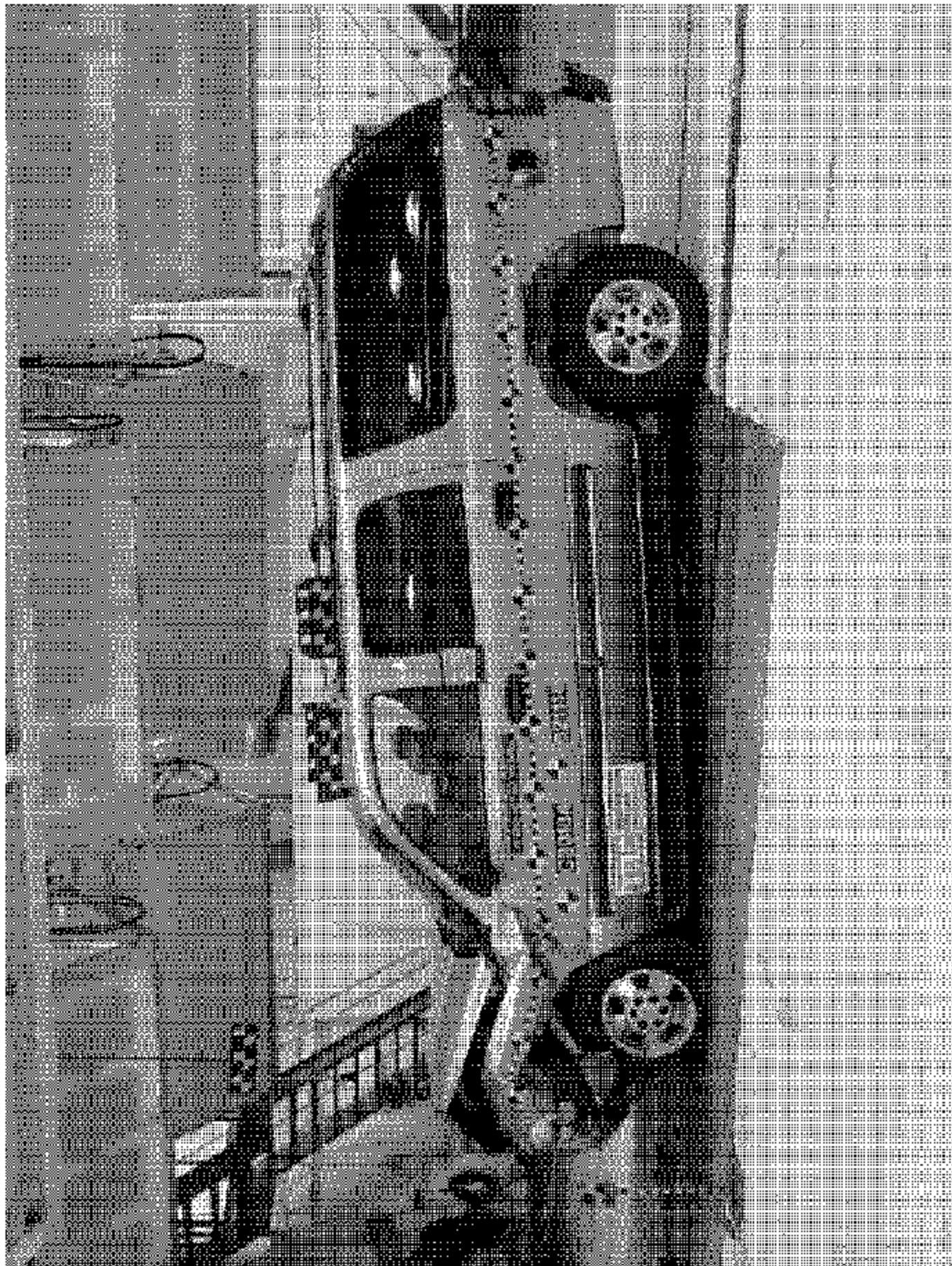


Image 4 Post-Test Left Side View

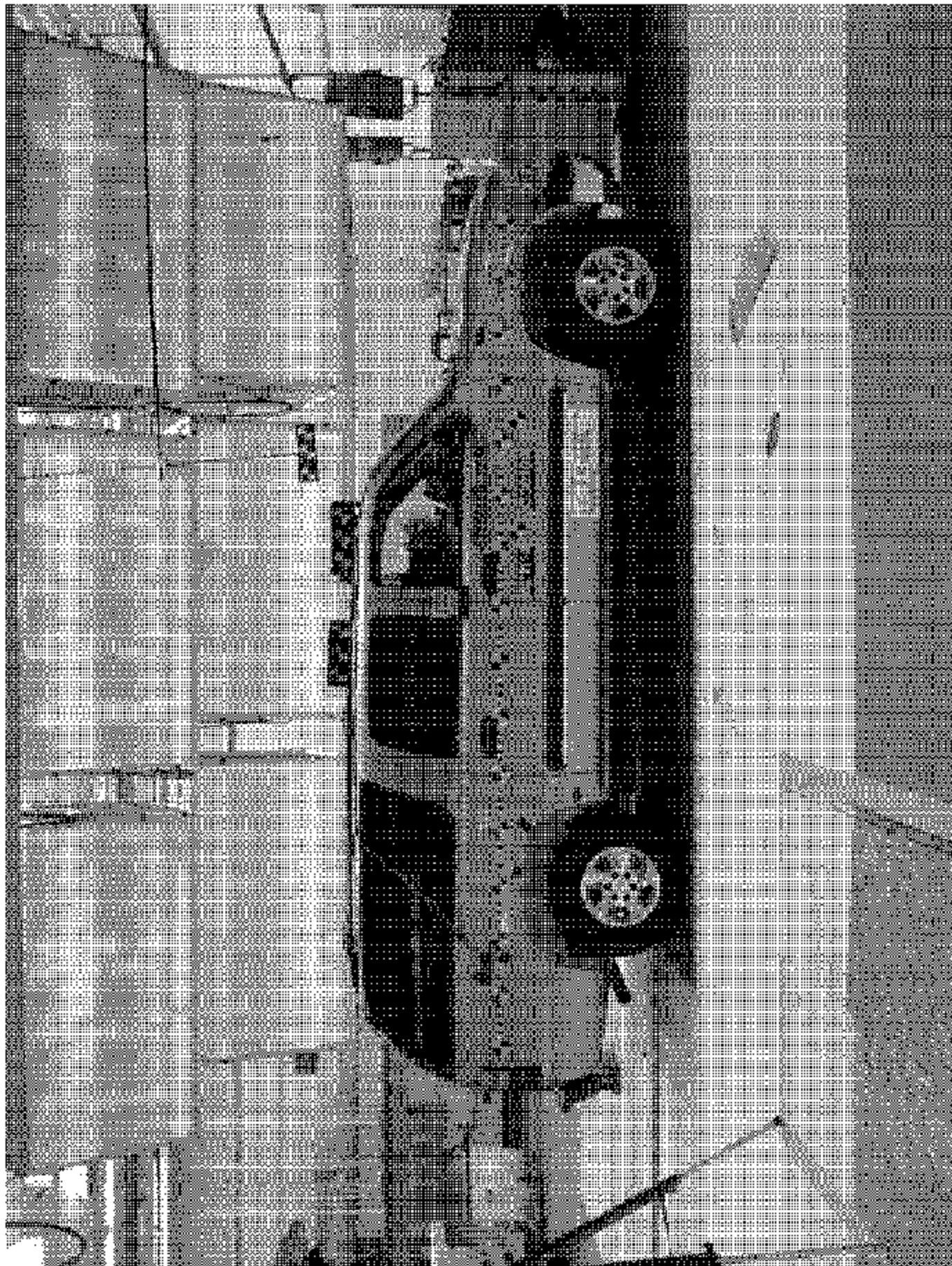


Image 5 Pre-Test Right Side View

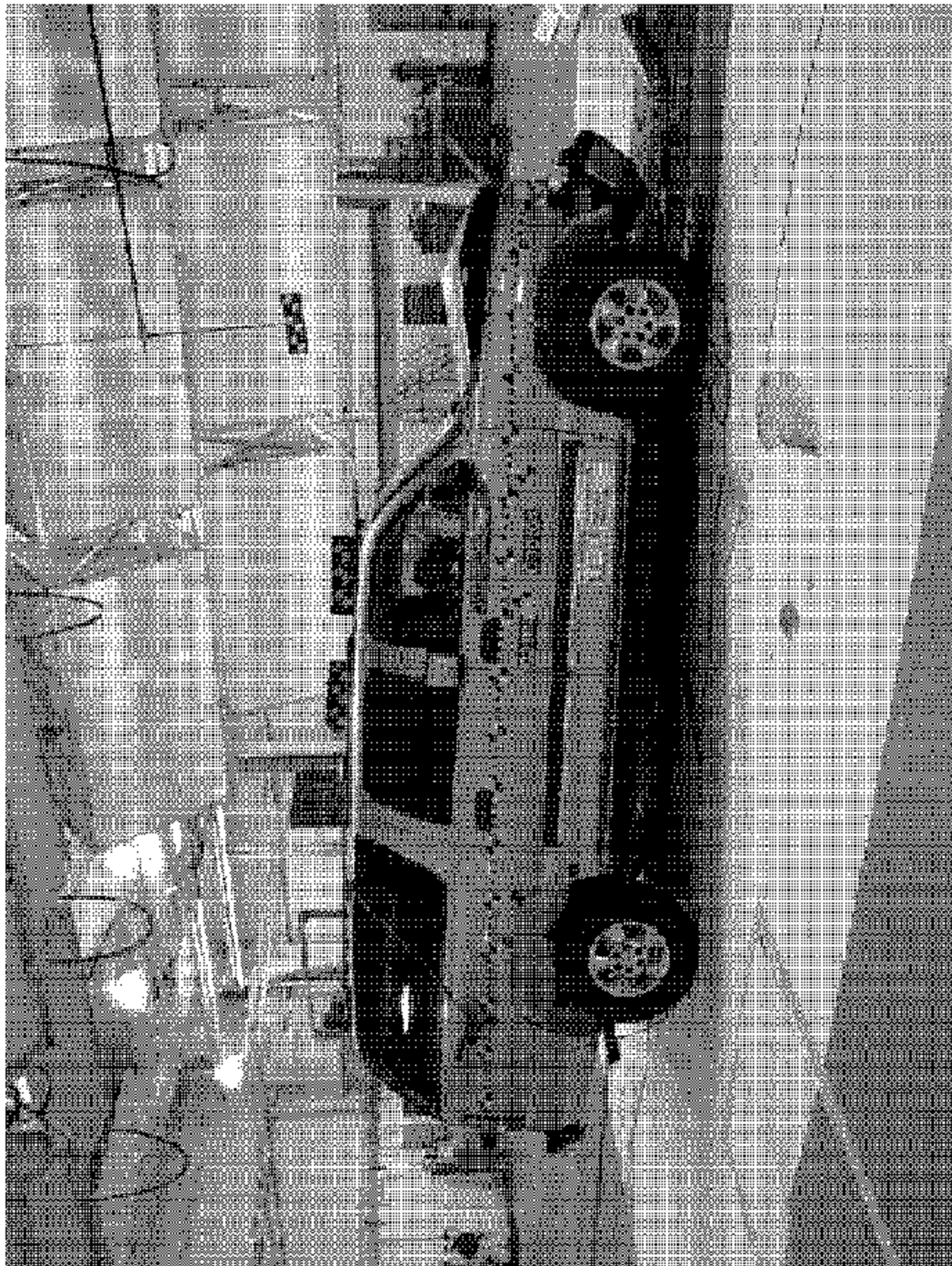


Image 6 Post-Test Right Side View

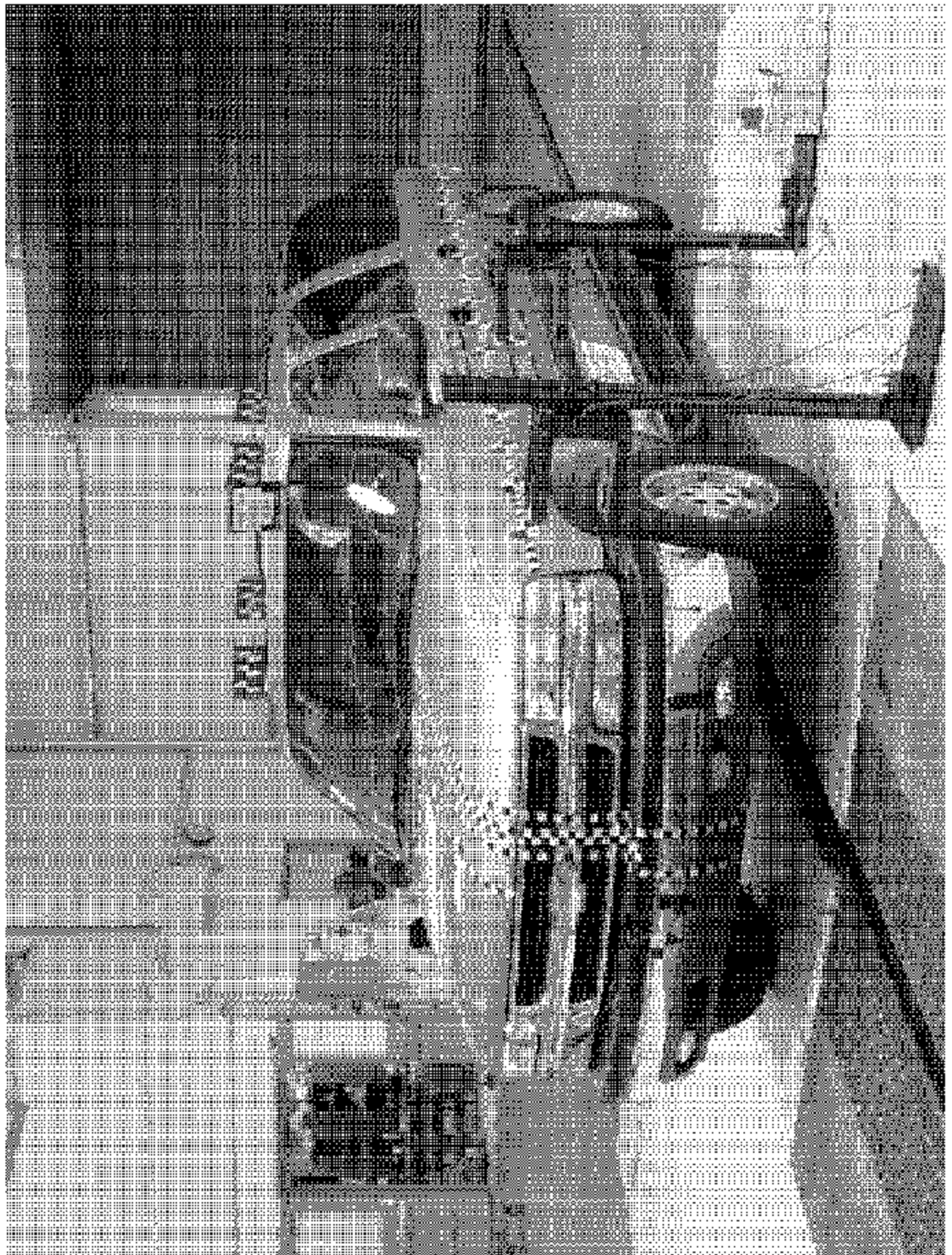


Image 7 Pre-Test Left Front Three-Quarter View

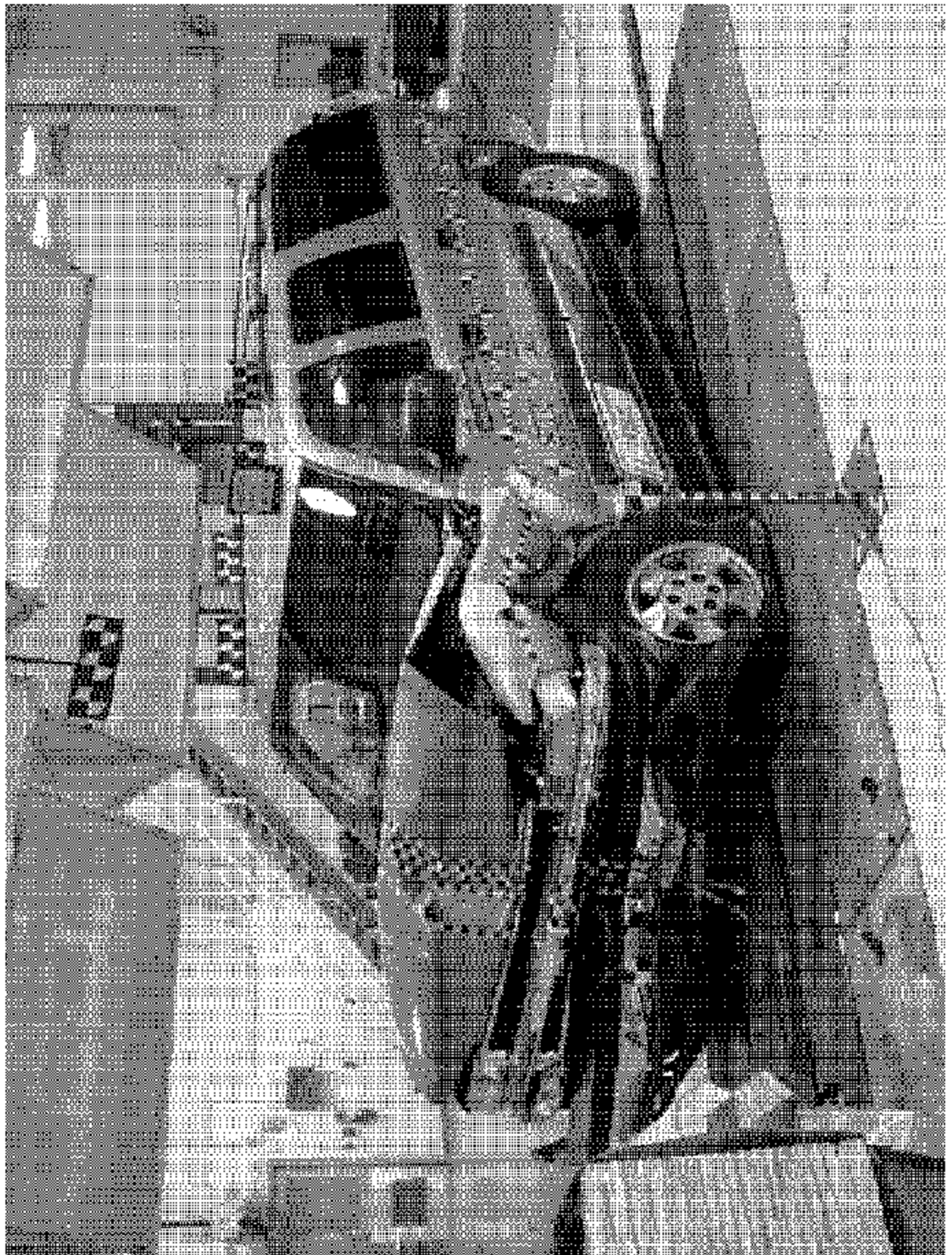


Image 8 Post-Test Left Front Three-Quarter View



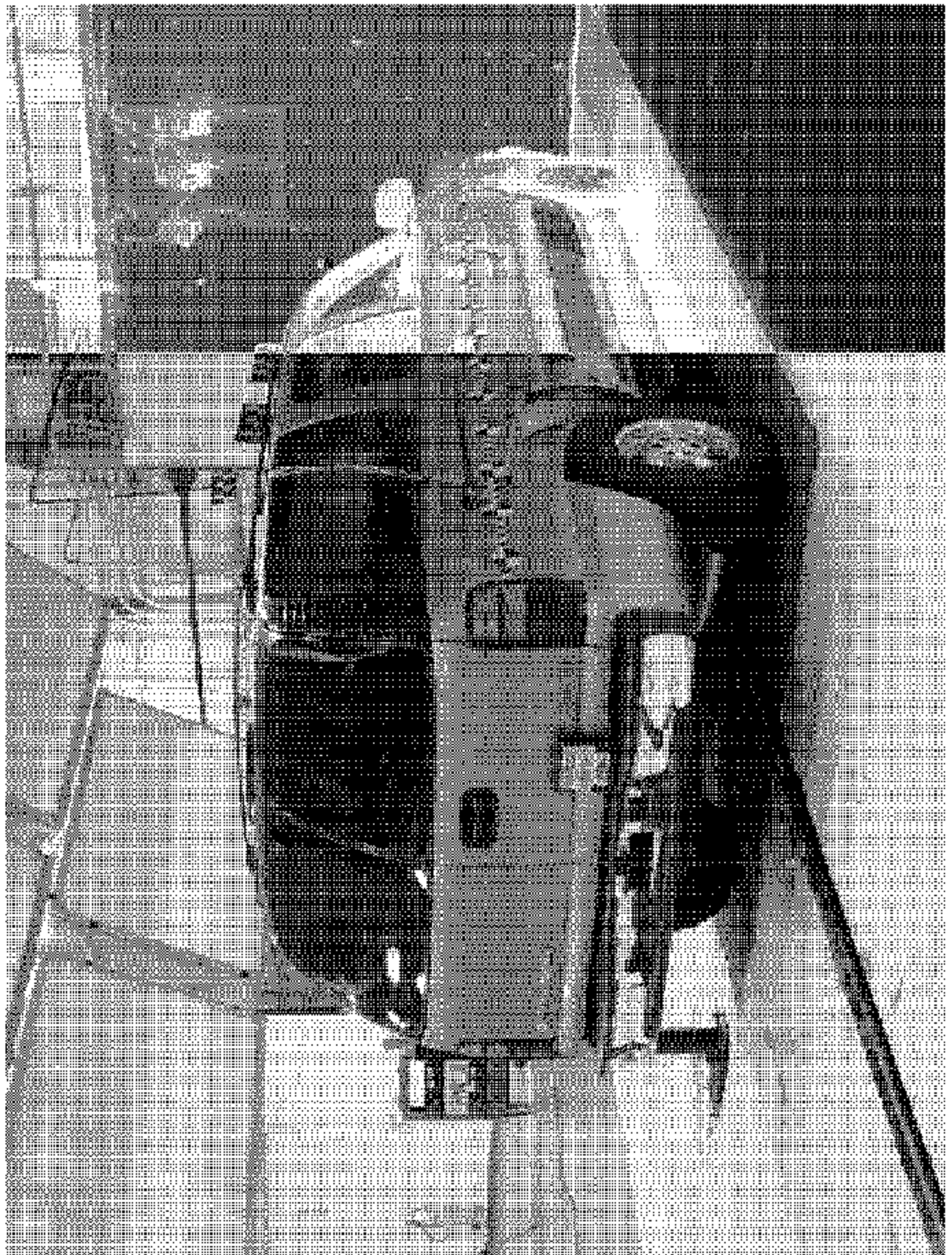


Image 9 Pre-Test Right Rear Three-Quarter View

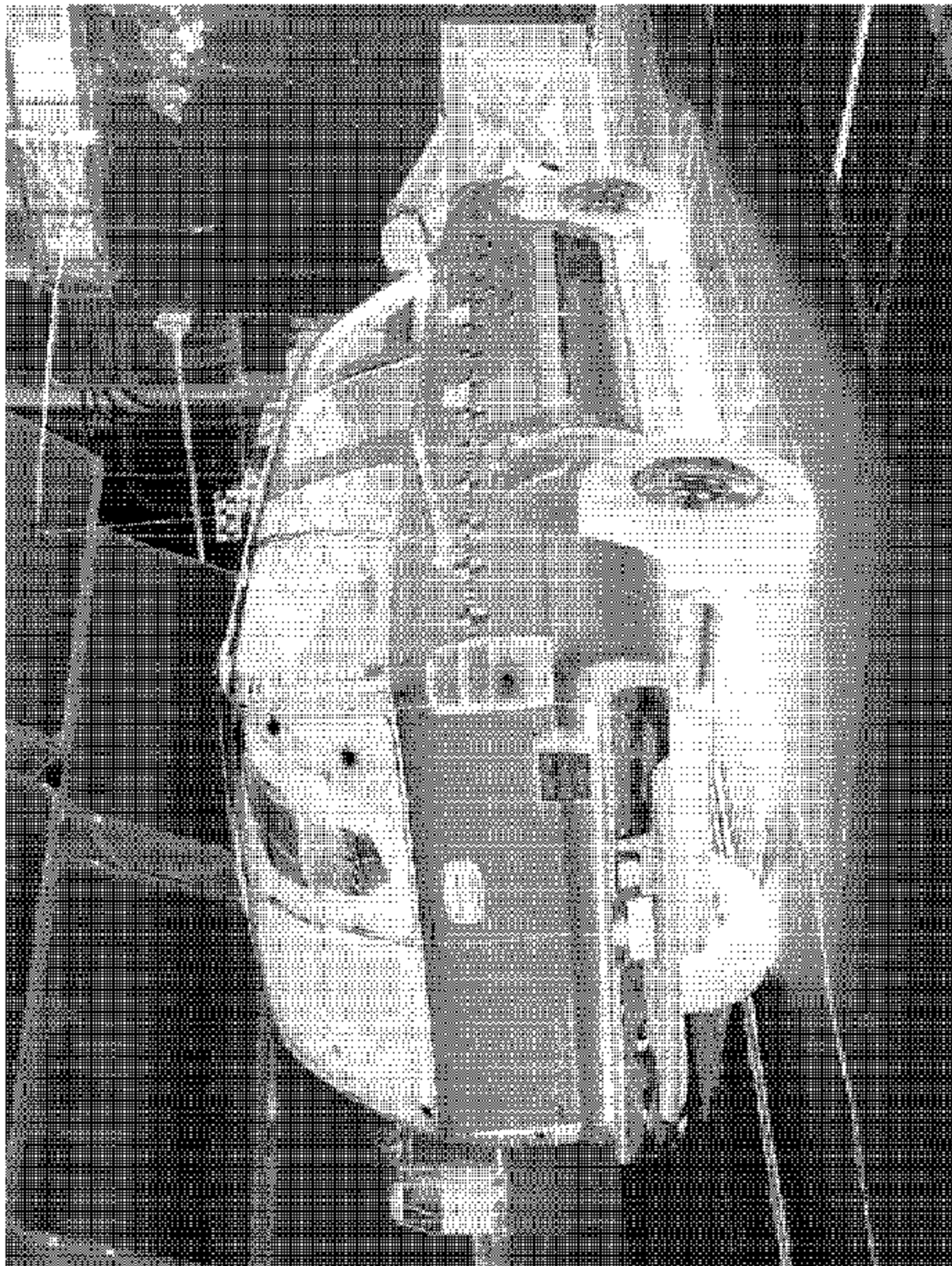


Image 10 Post-Test Right Rear Three-Quarter View

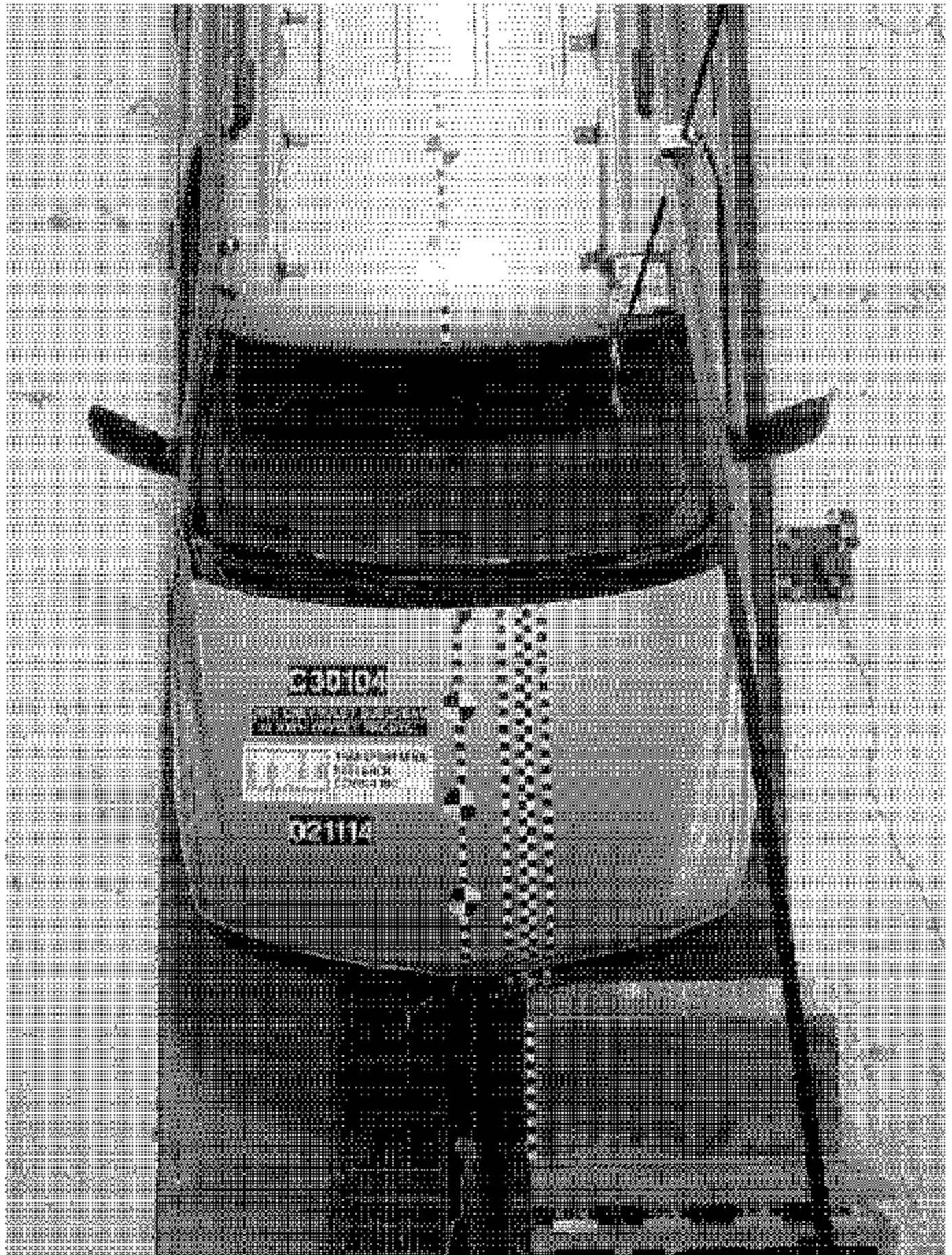


Image 11 Pre-Test Overhead View

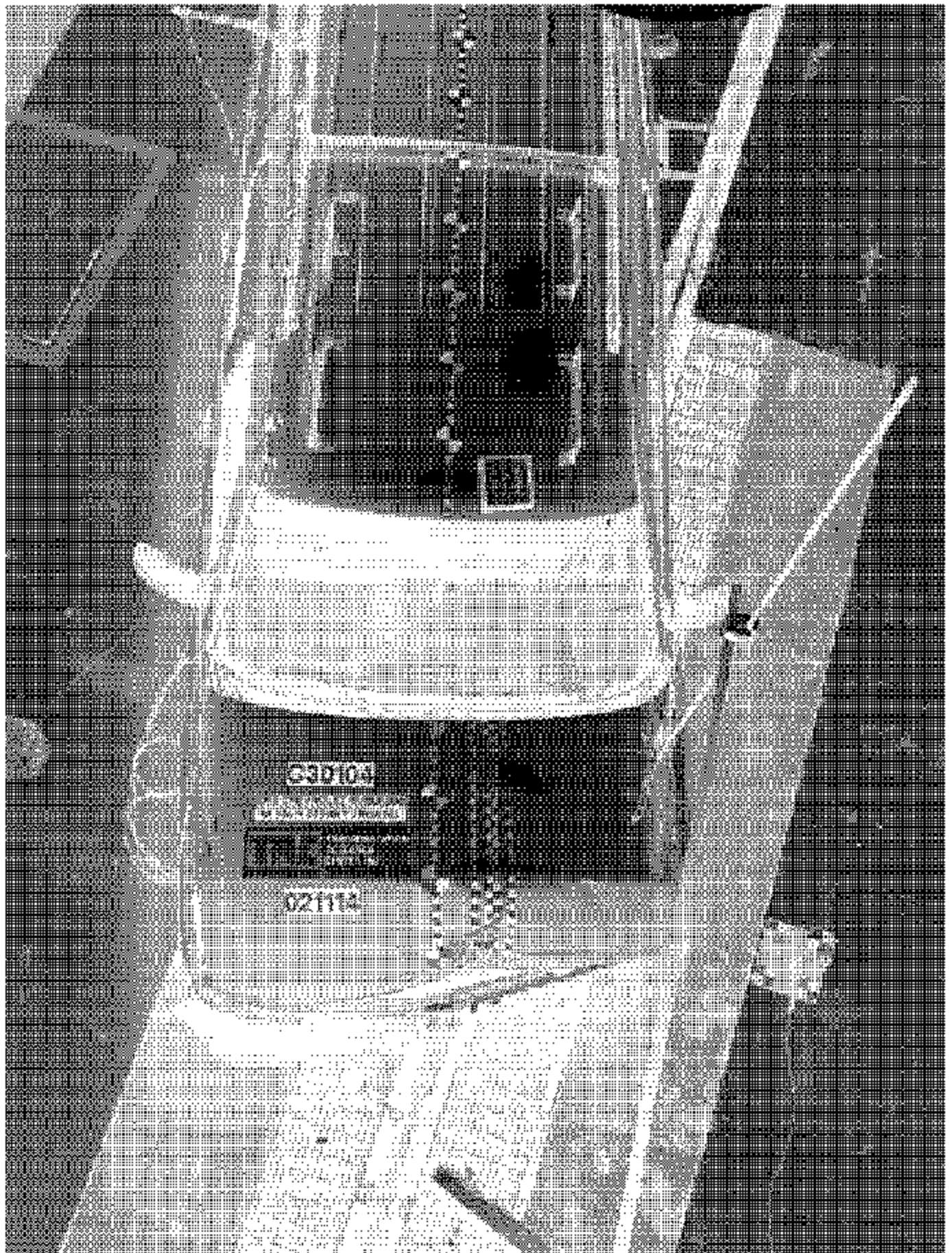


Image 12 Post-Test Overhead View

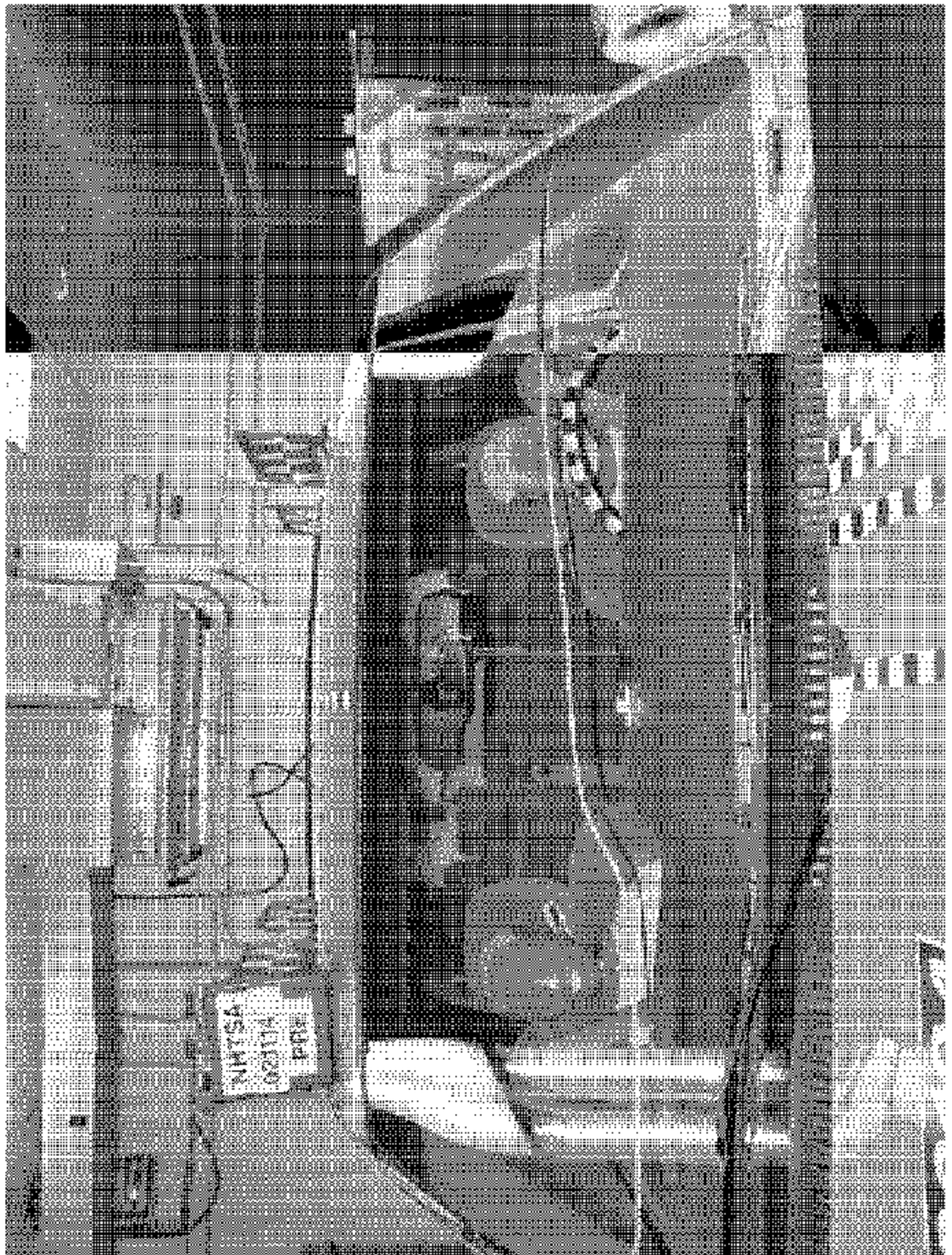


Image 13 Pre-Test Windshield View

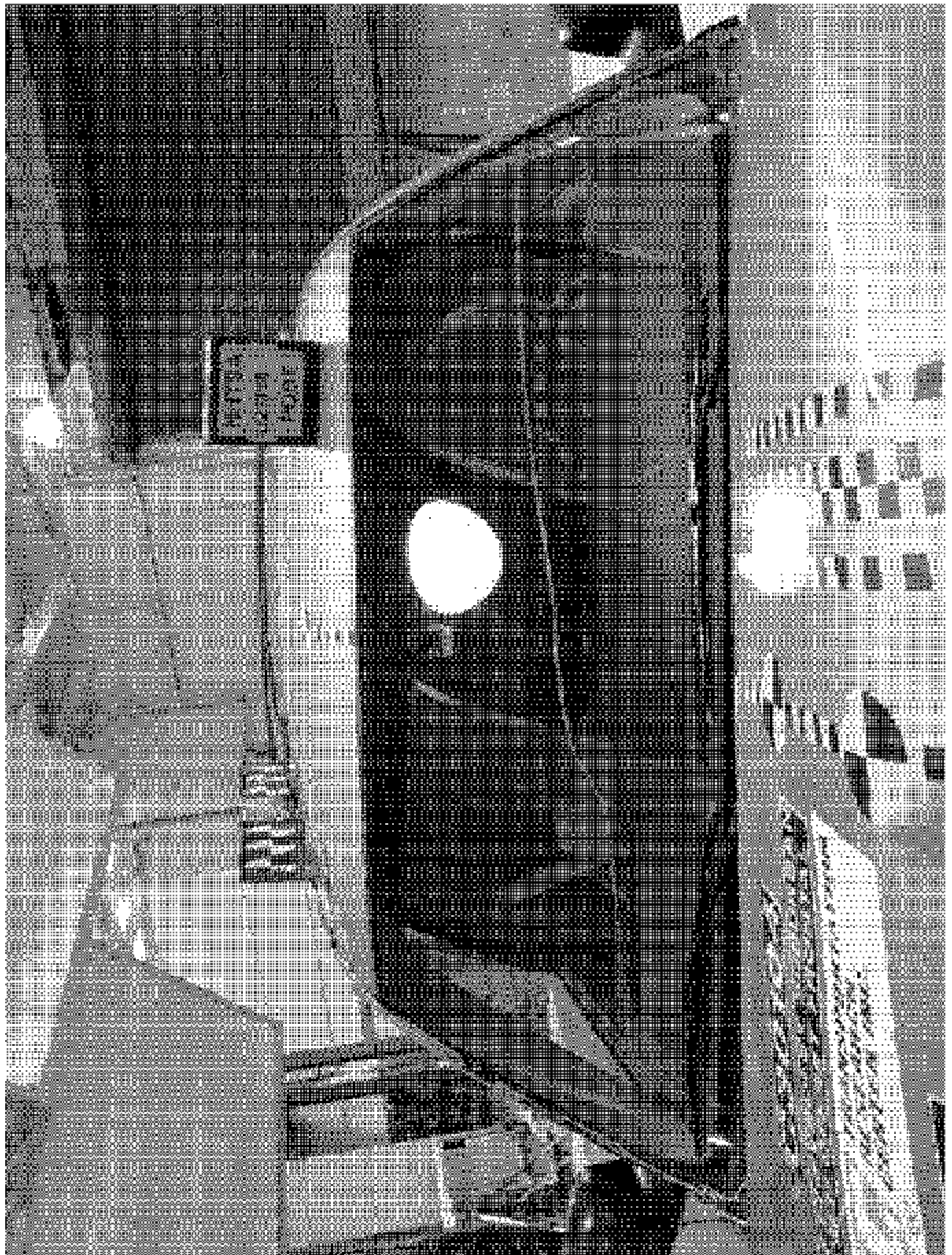


Image 14 Post-Test Windshield View

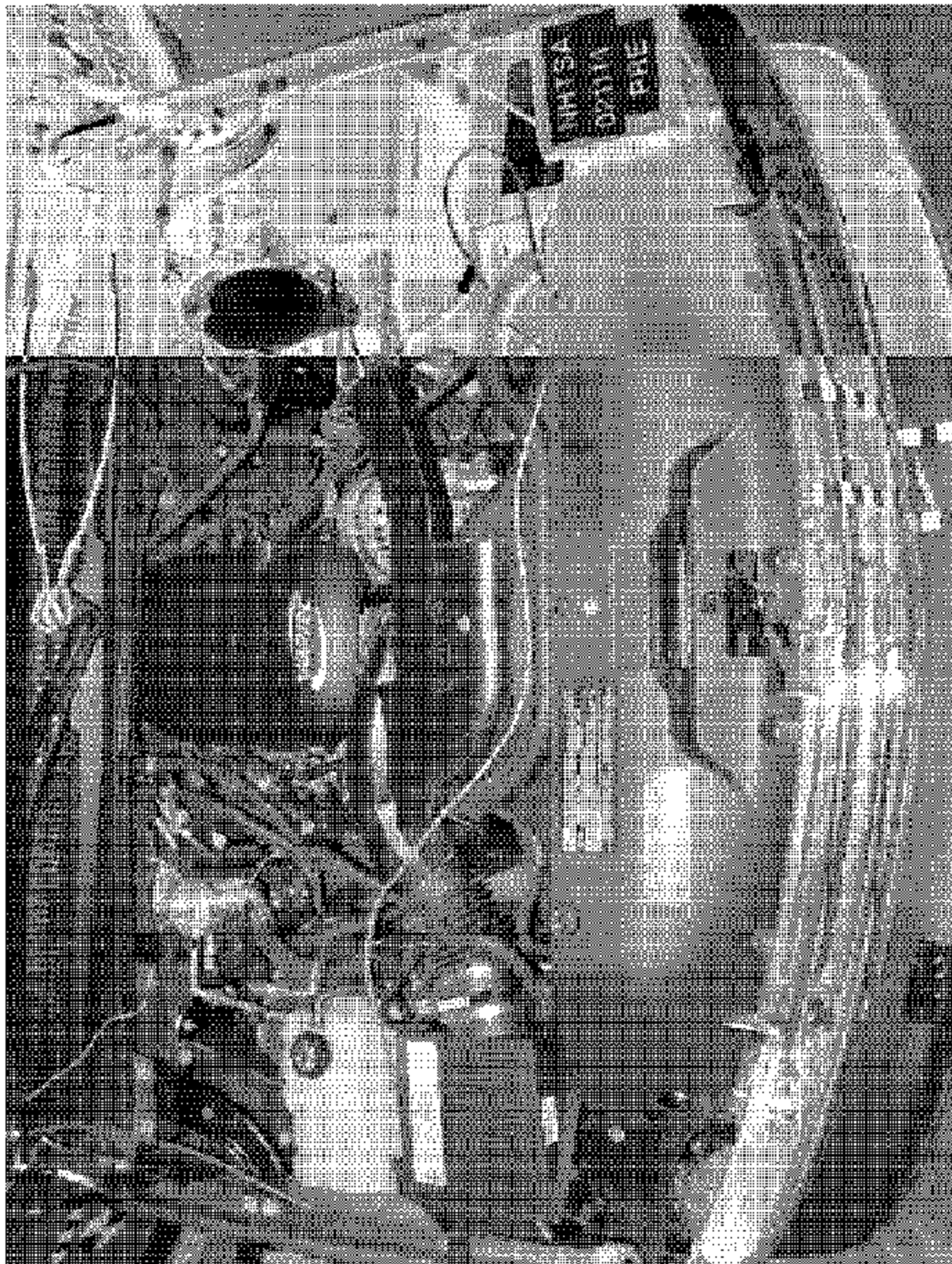


Image 15 Pre-Test Engine Compartment View

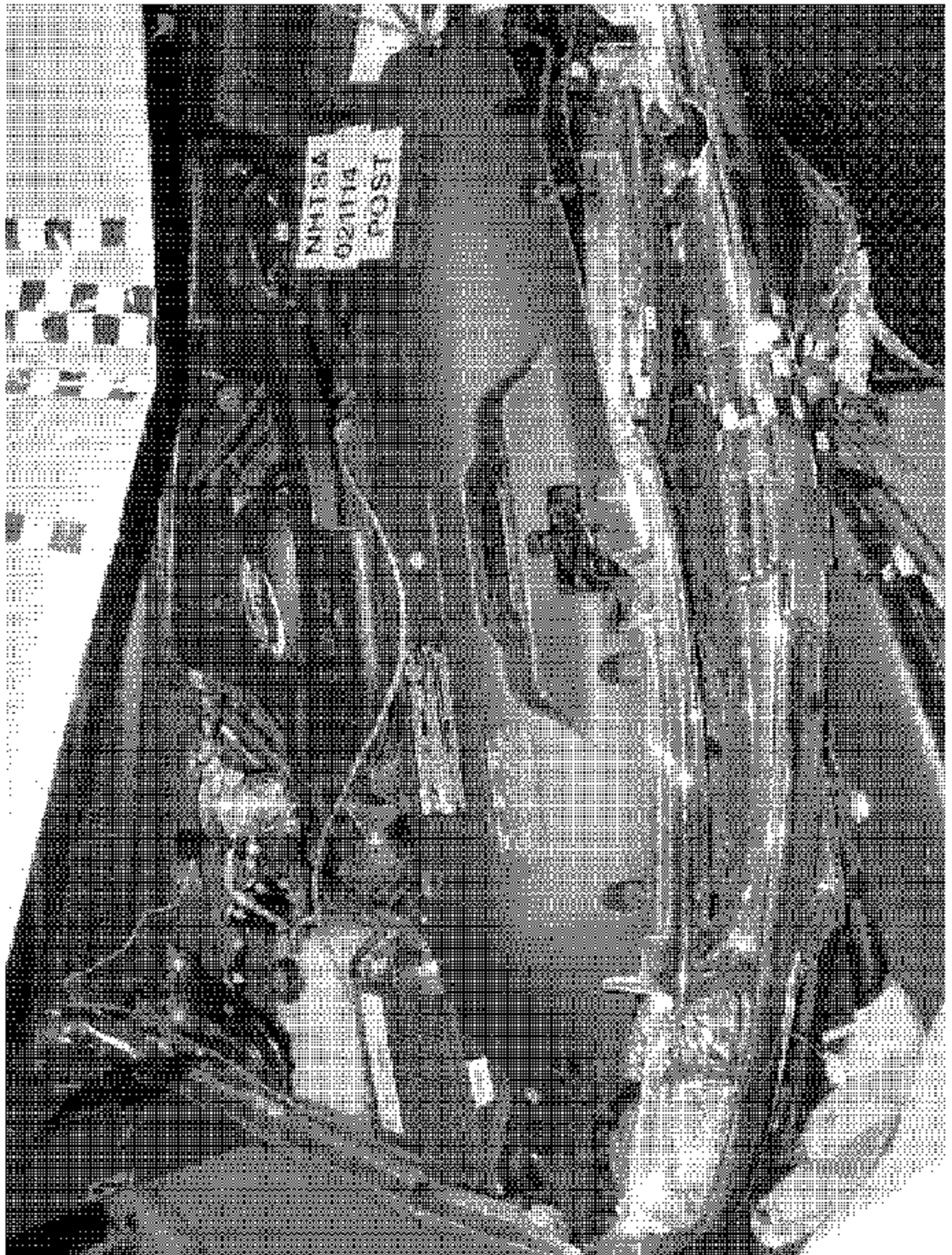


Image 16 Post-Test Engine Compartment View



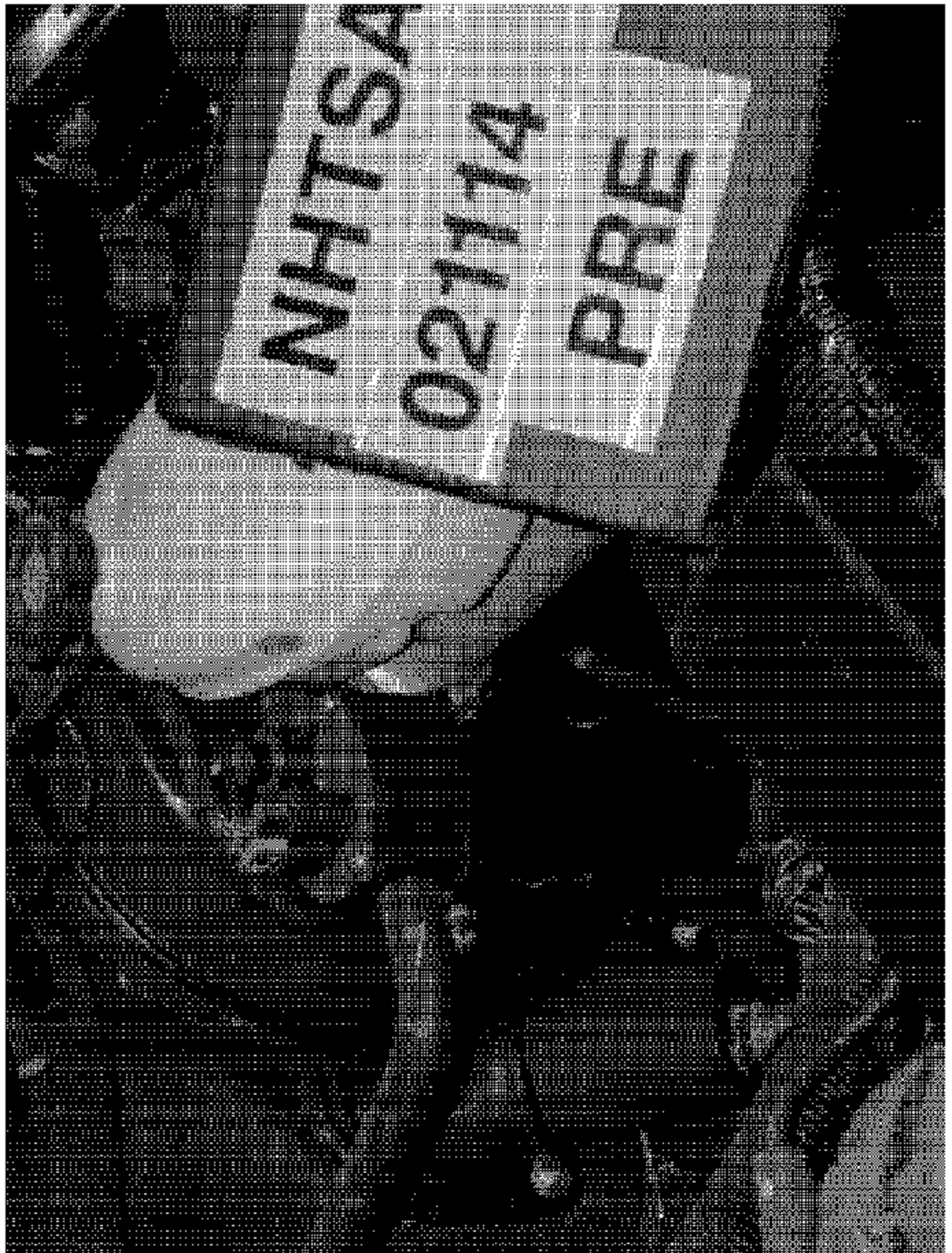


Image 17 Pre-Test Steering Column and Firewall - Under Hood View

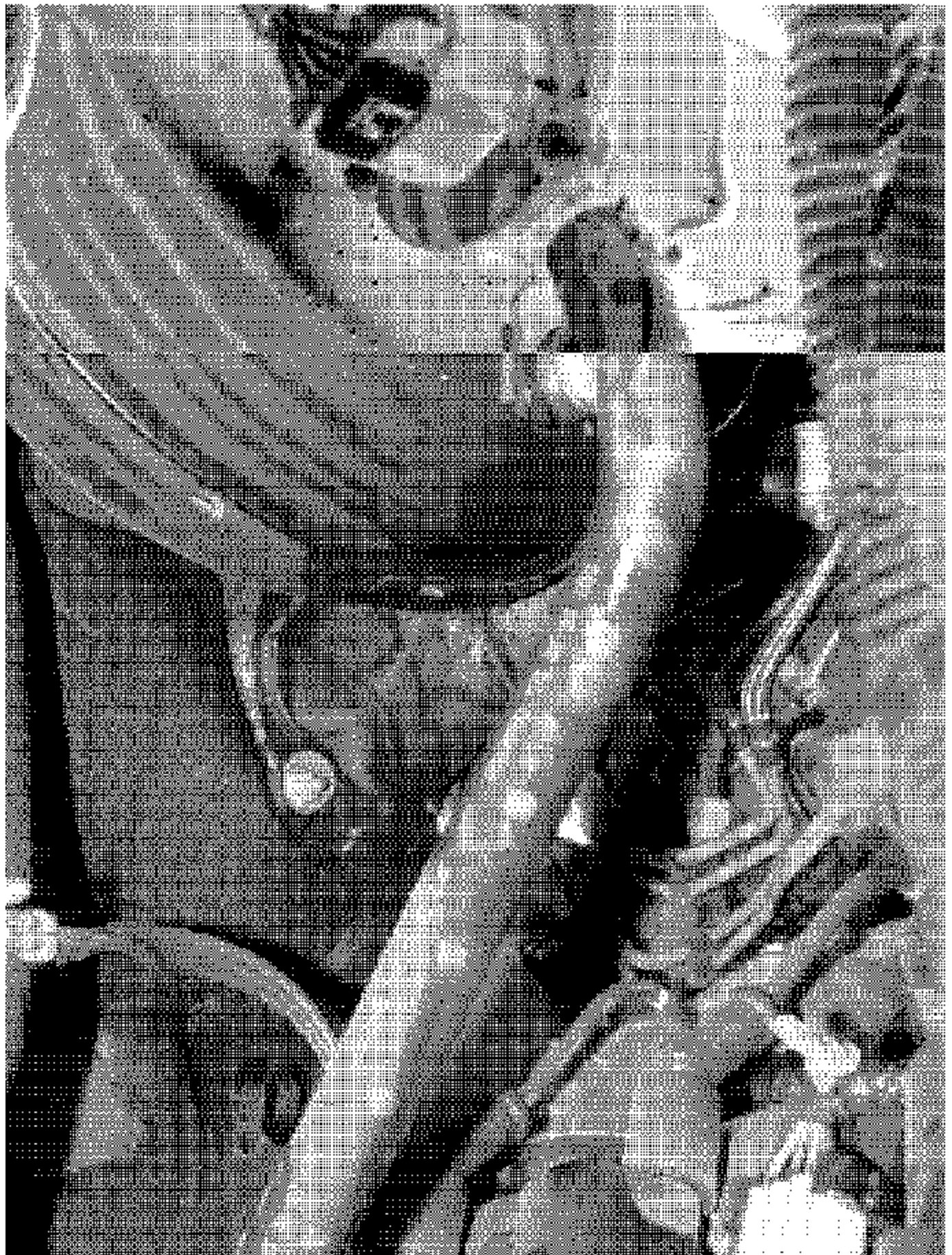


Image 18 Post-Test Steering Column and Firewall - Under Hood View

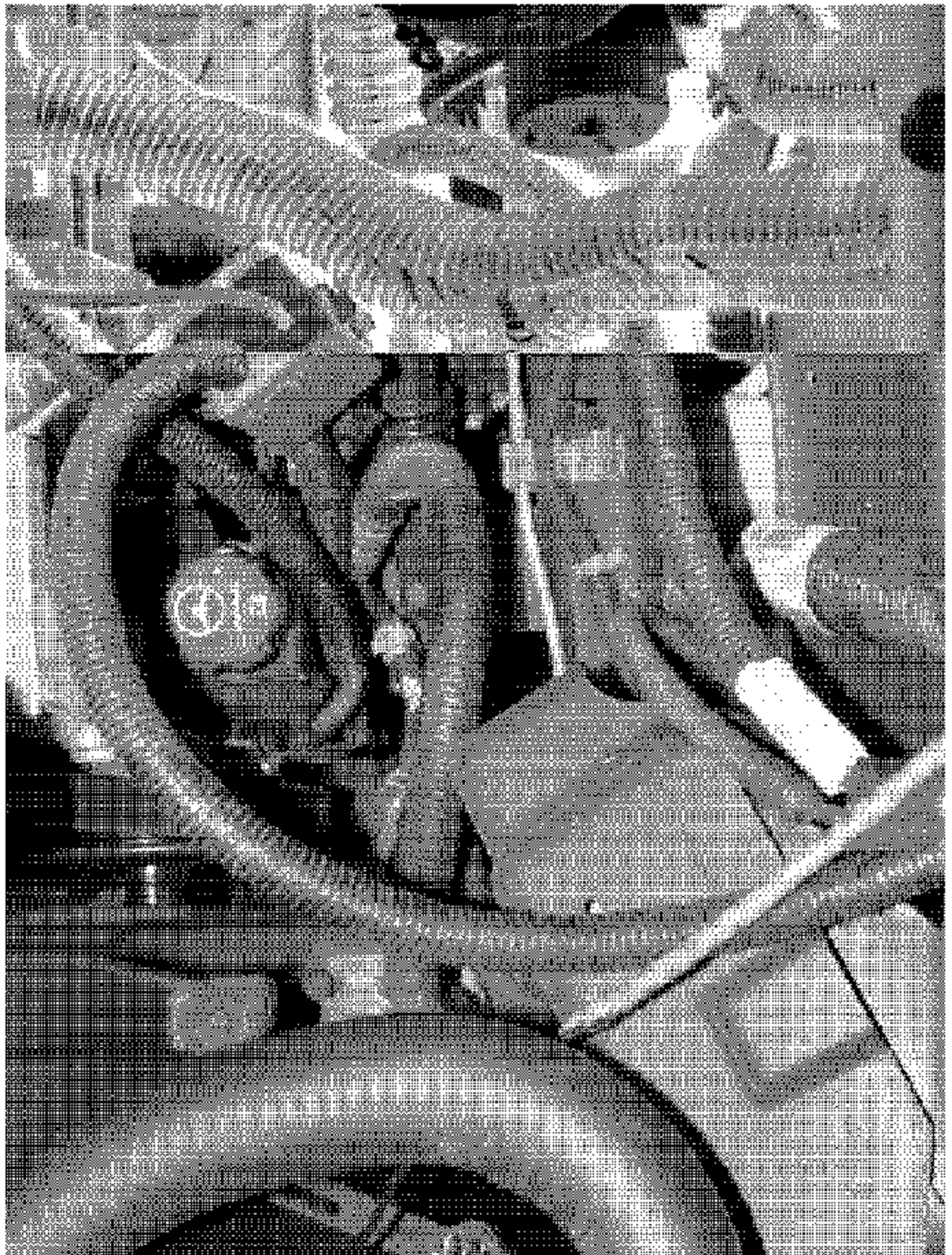


Image 19 Pre-Test Steering Box View

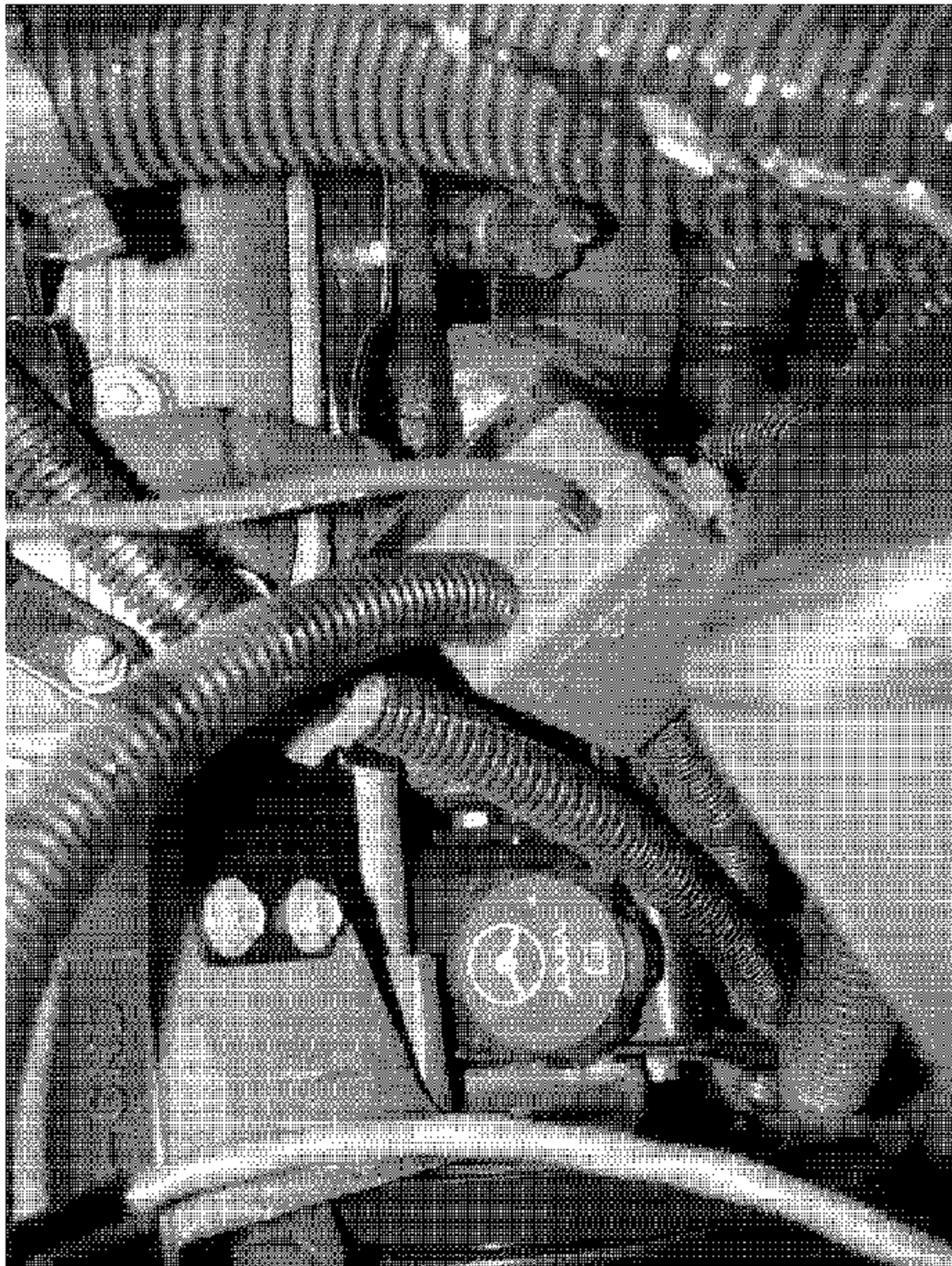


Image 20 Post-Test Steering Box View

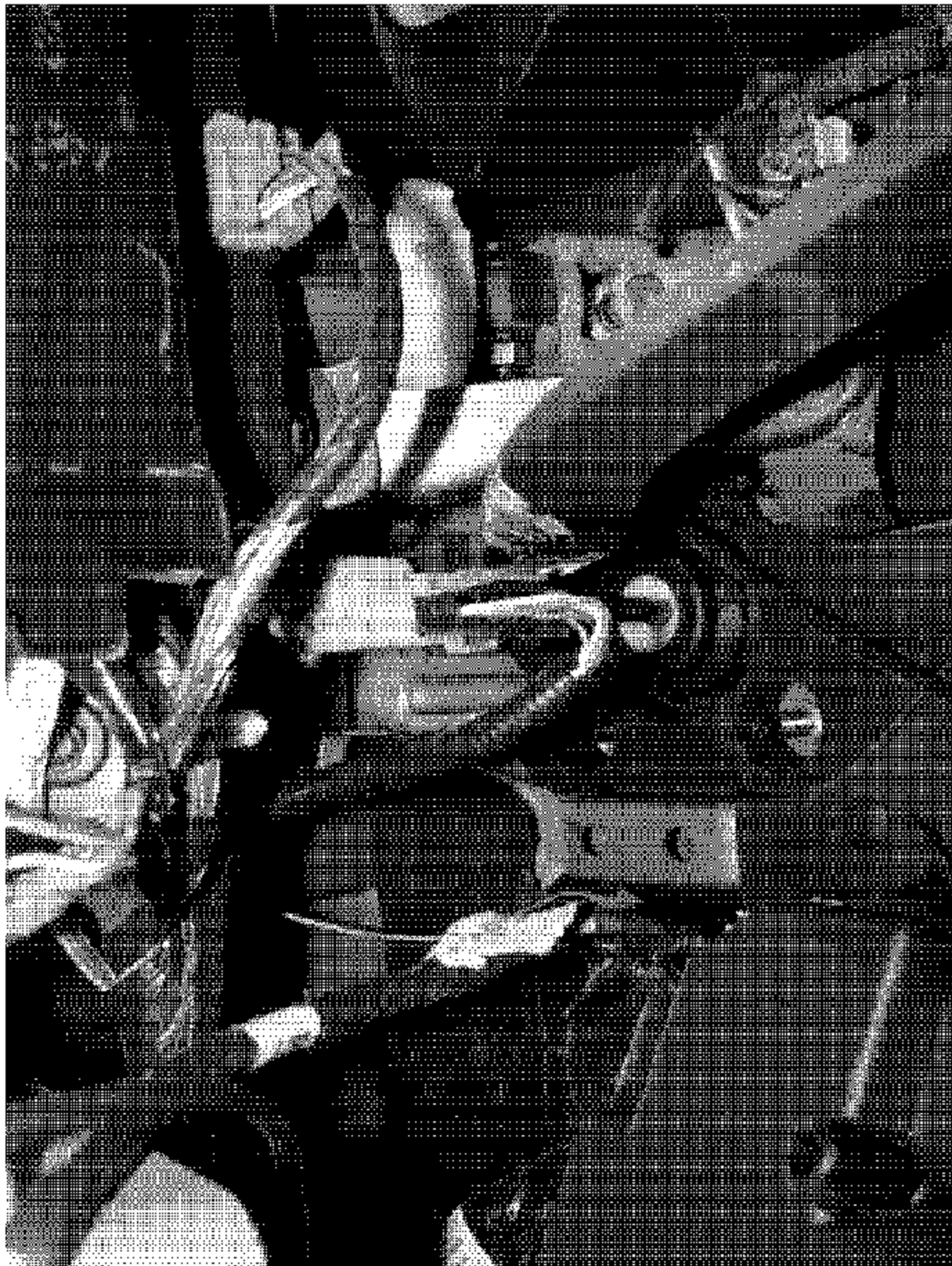


Image 21 Pre-Test Steering Column and Firewall - Interior View



Image 22 Post-Test Steering Column and Firewall - Interior View

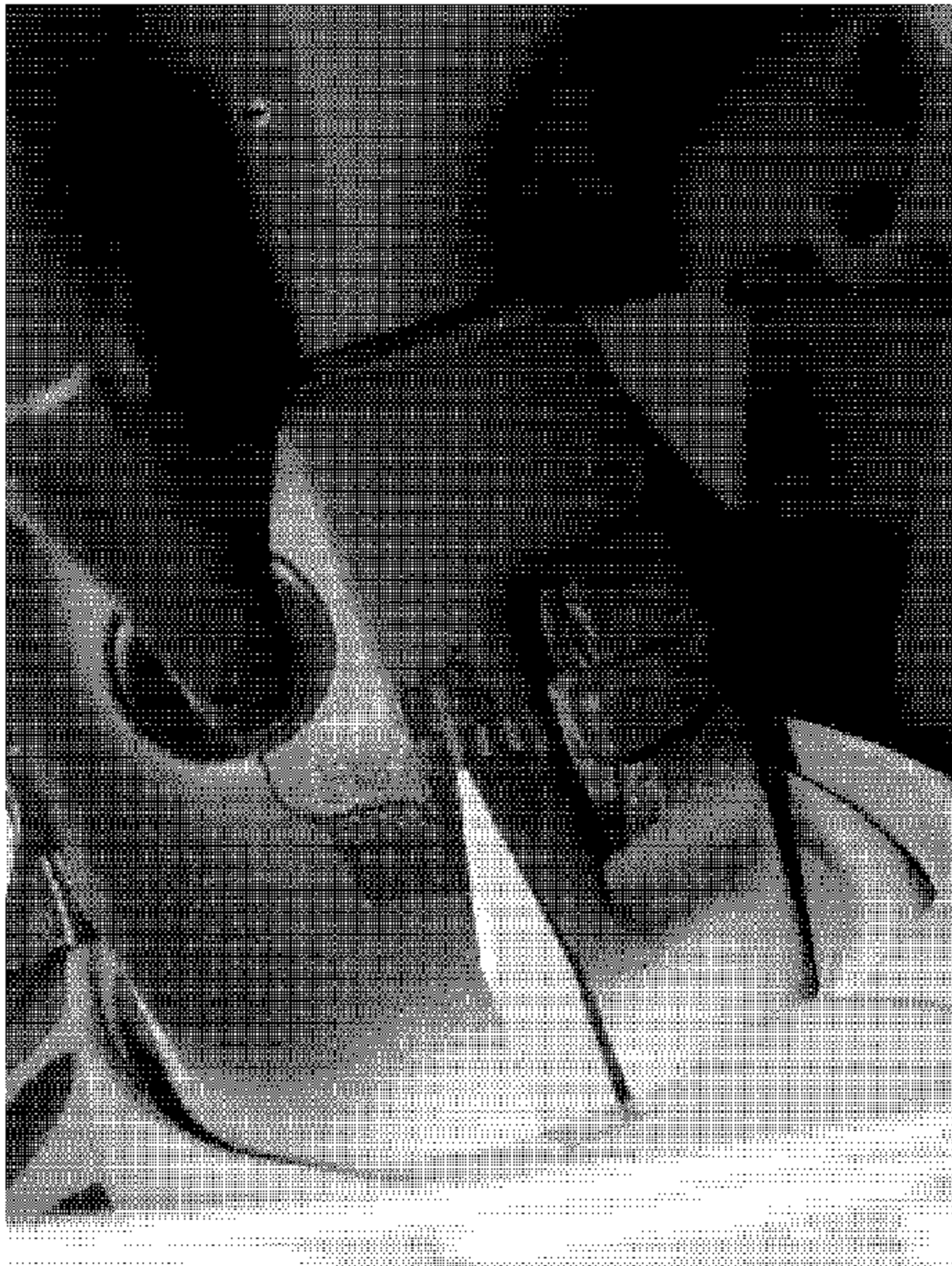


Image 23 Pre-Test Steering Column Position View

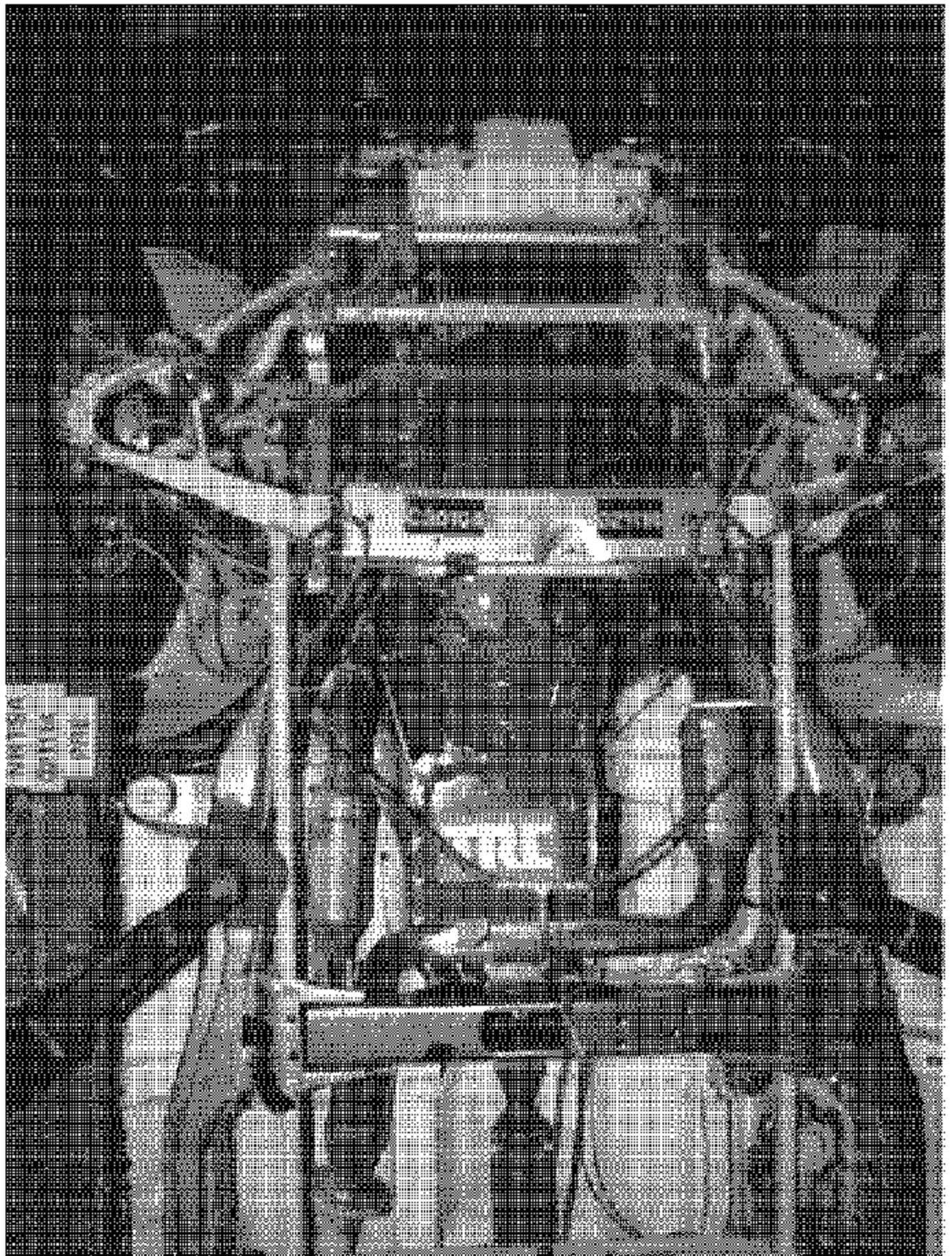


Image 24 Pre-Test Front Underbody View



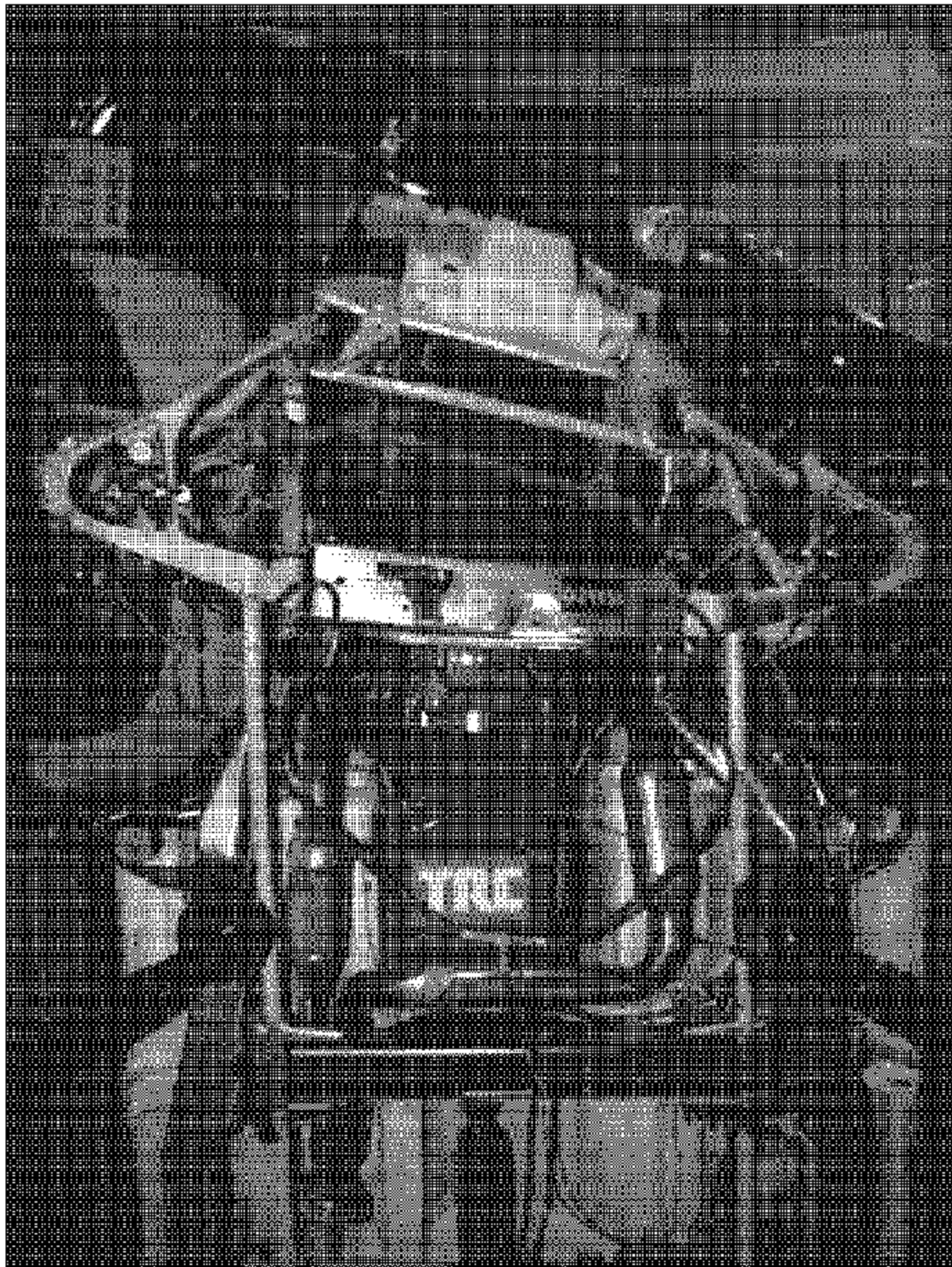


Image 25 Post-Test Front Underbody View

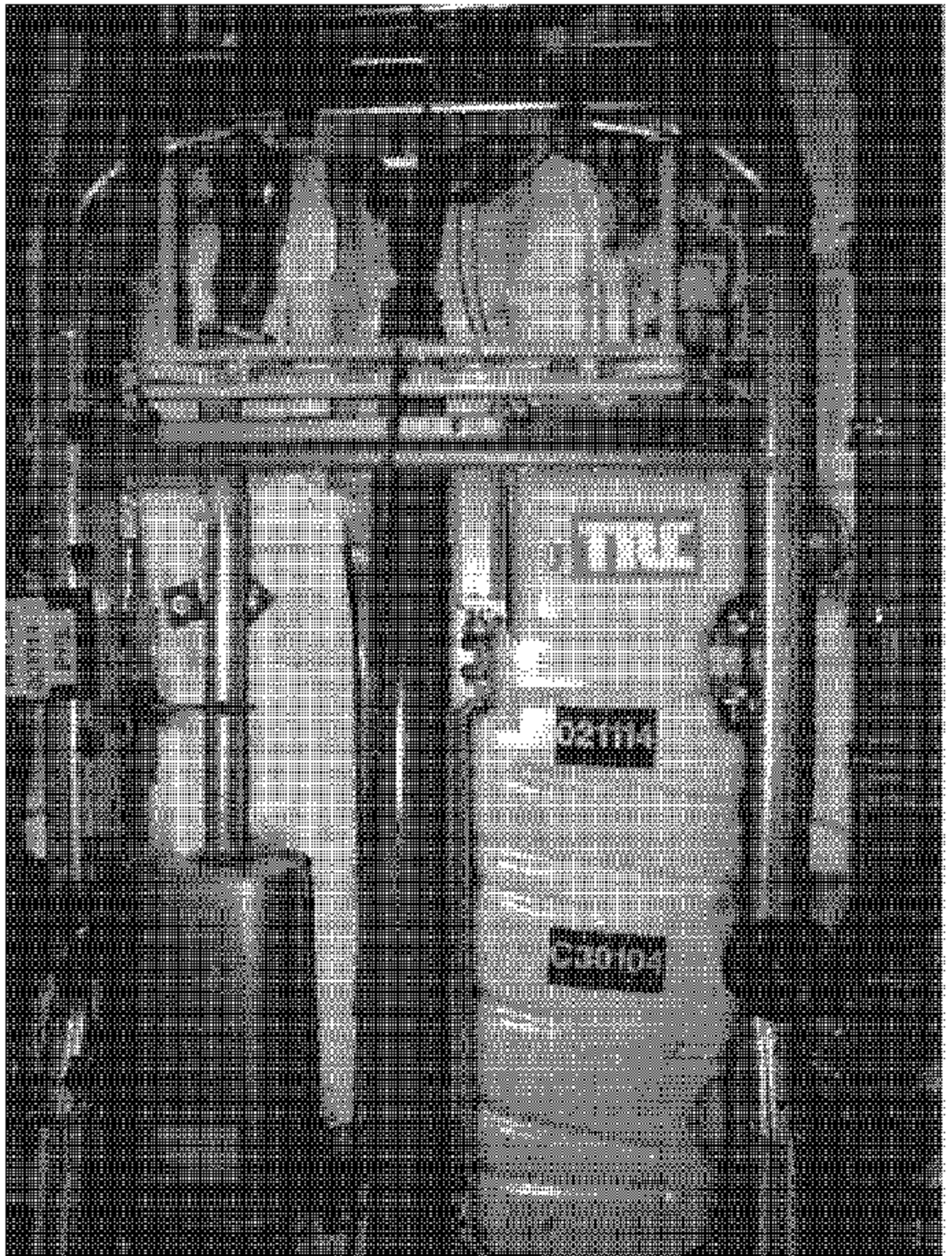


Image 26 Pre-Test Mid Underbody View

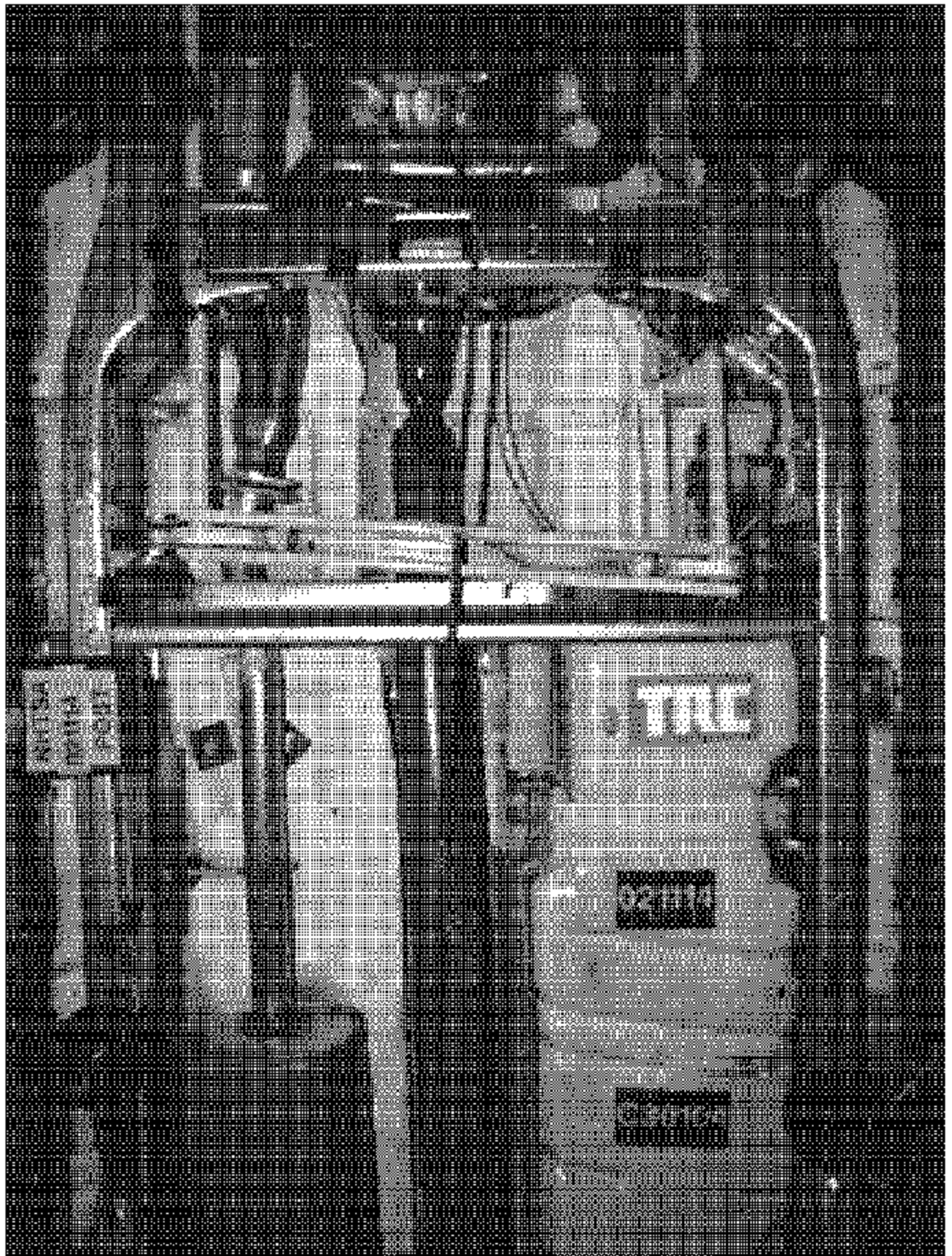


Image 27 Post-Test Mid Underbody View

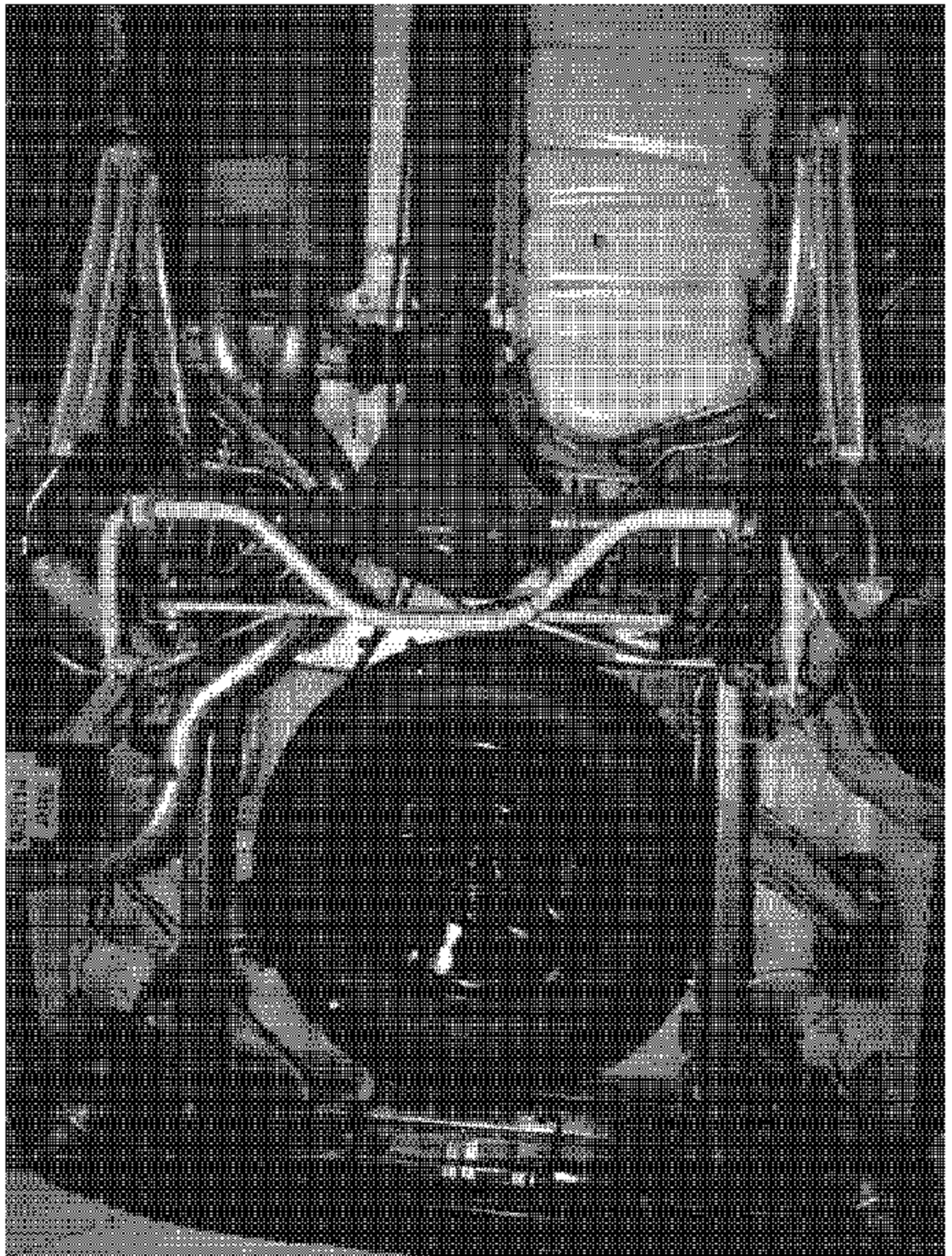


Image 28 Pre-Test Rear Underbody View

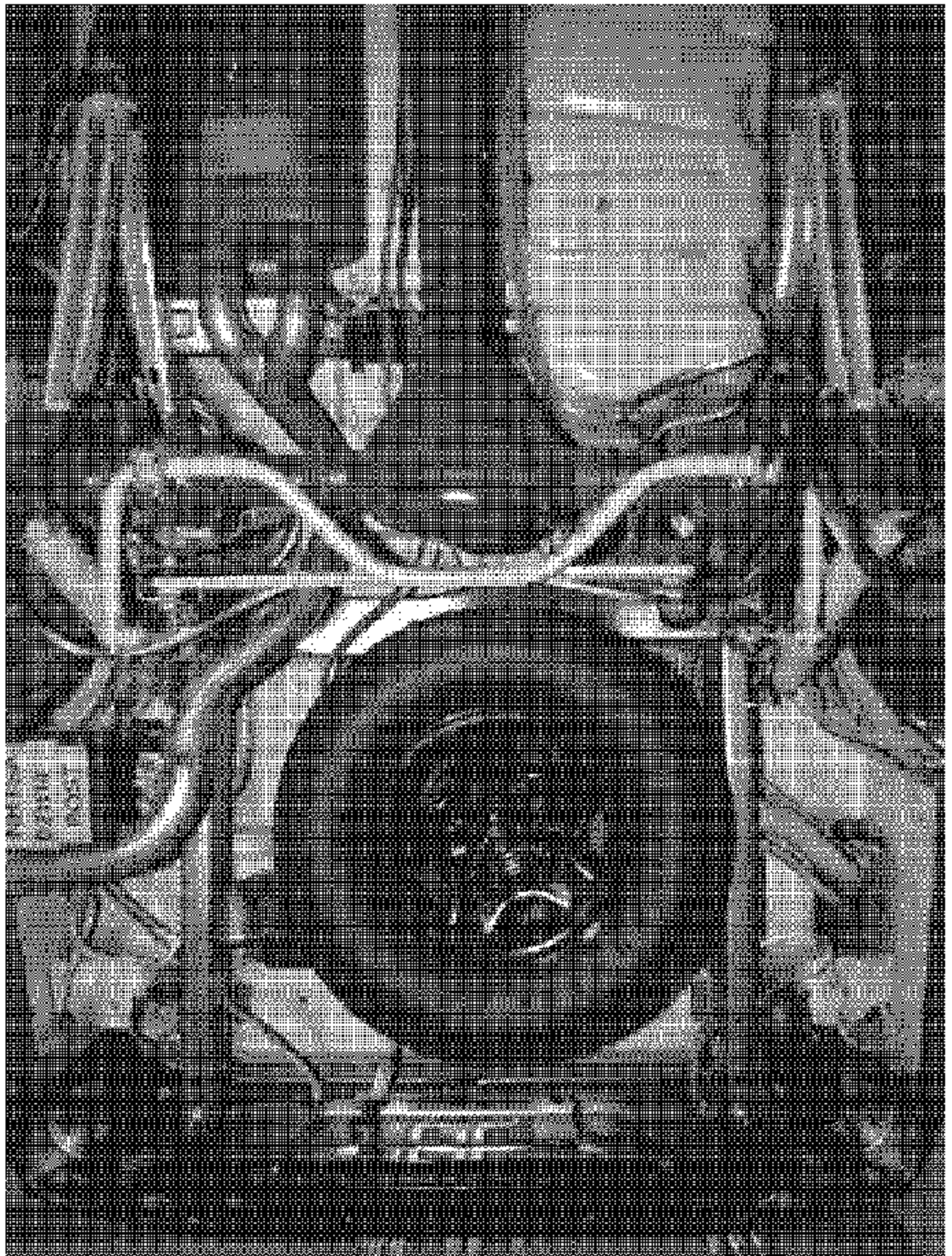


Image 29 Post-Test Rear Underbody View

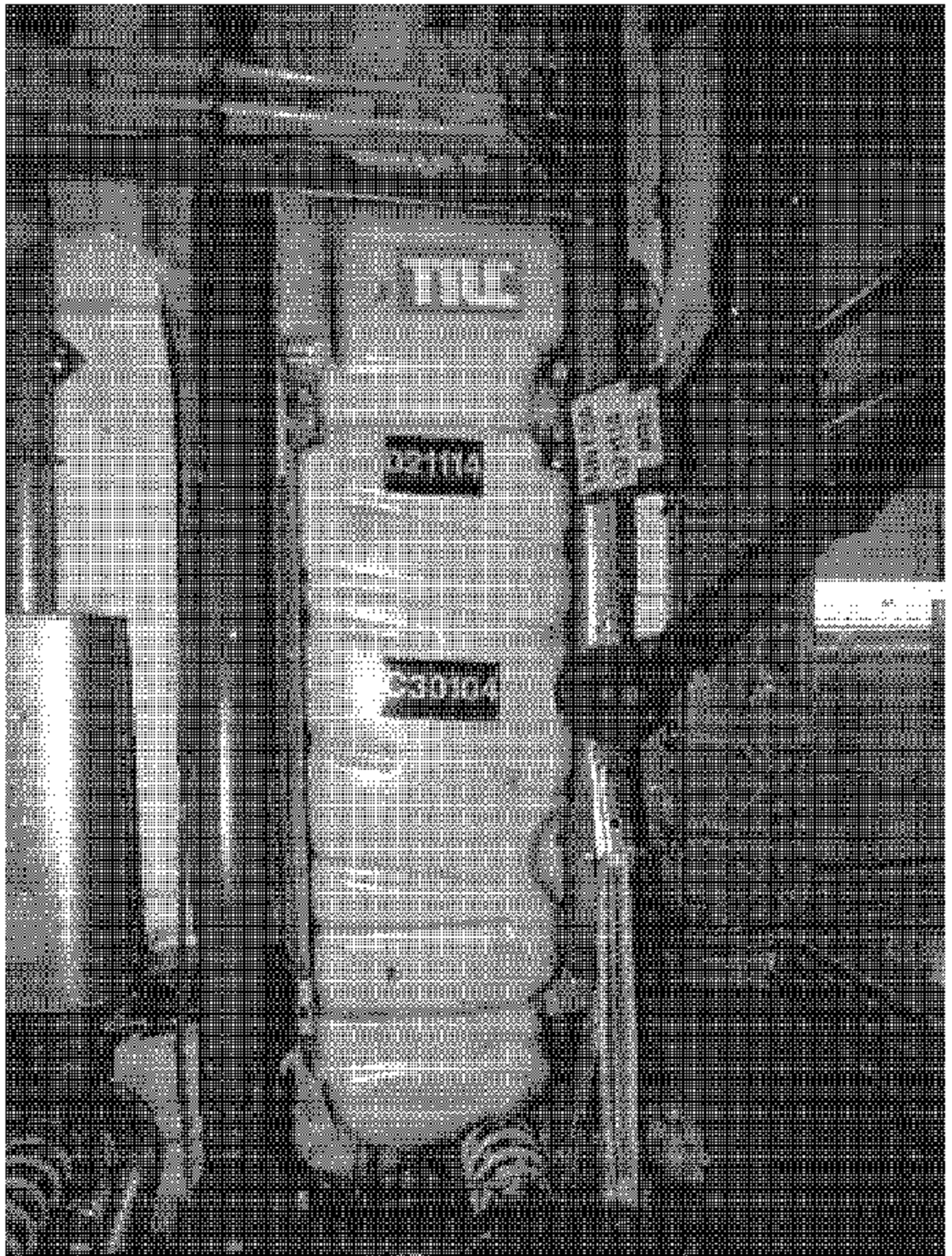


Image 30 Pre-Test Fuel Tank View

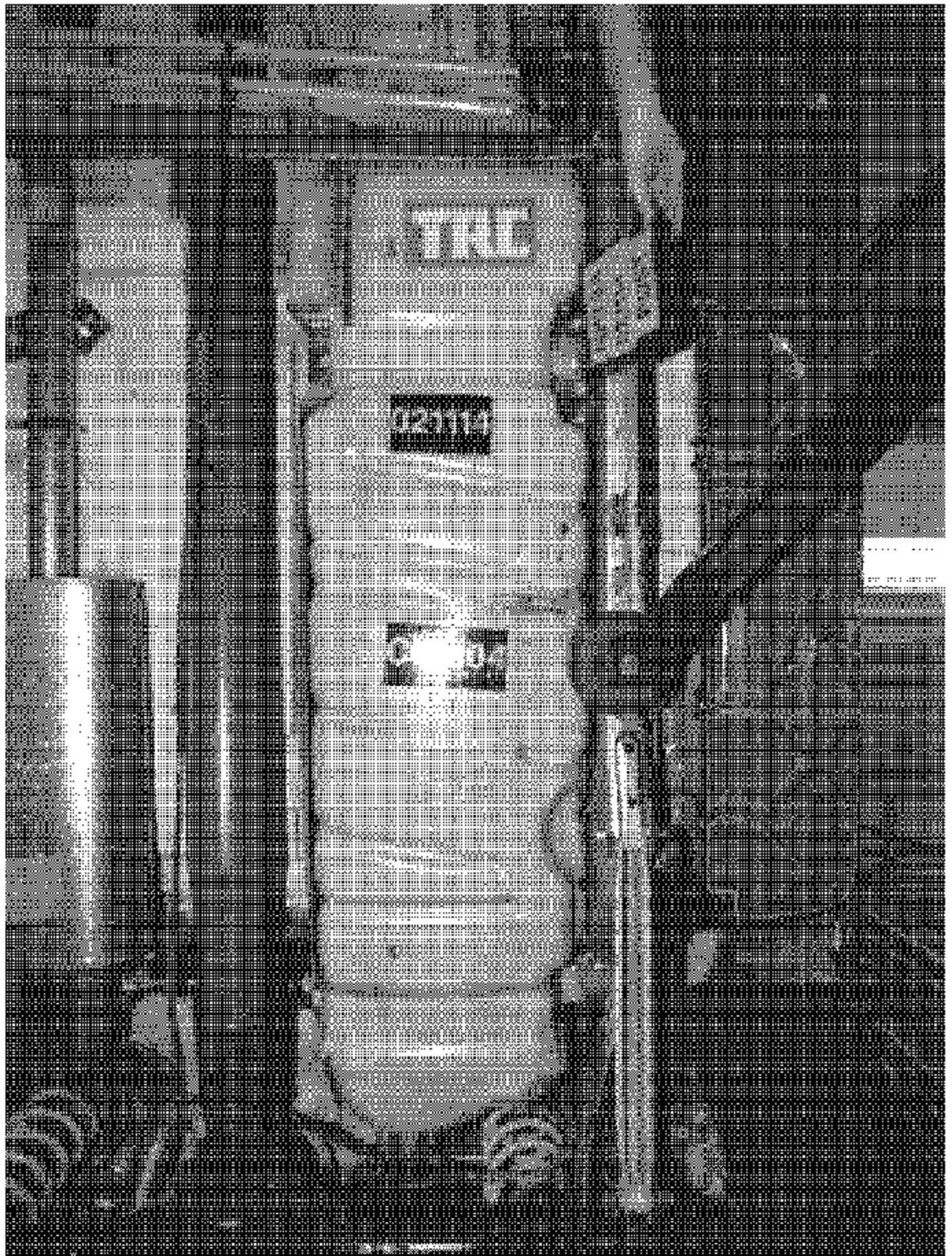


Image 31 Post-Test Fuel Tank View



Image 32 Pre-Test Fuel Lines View



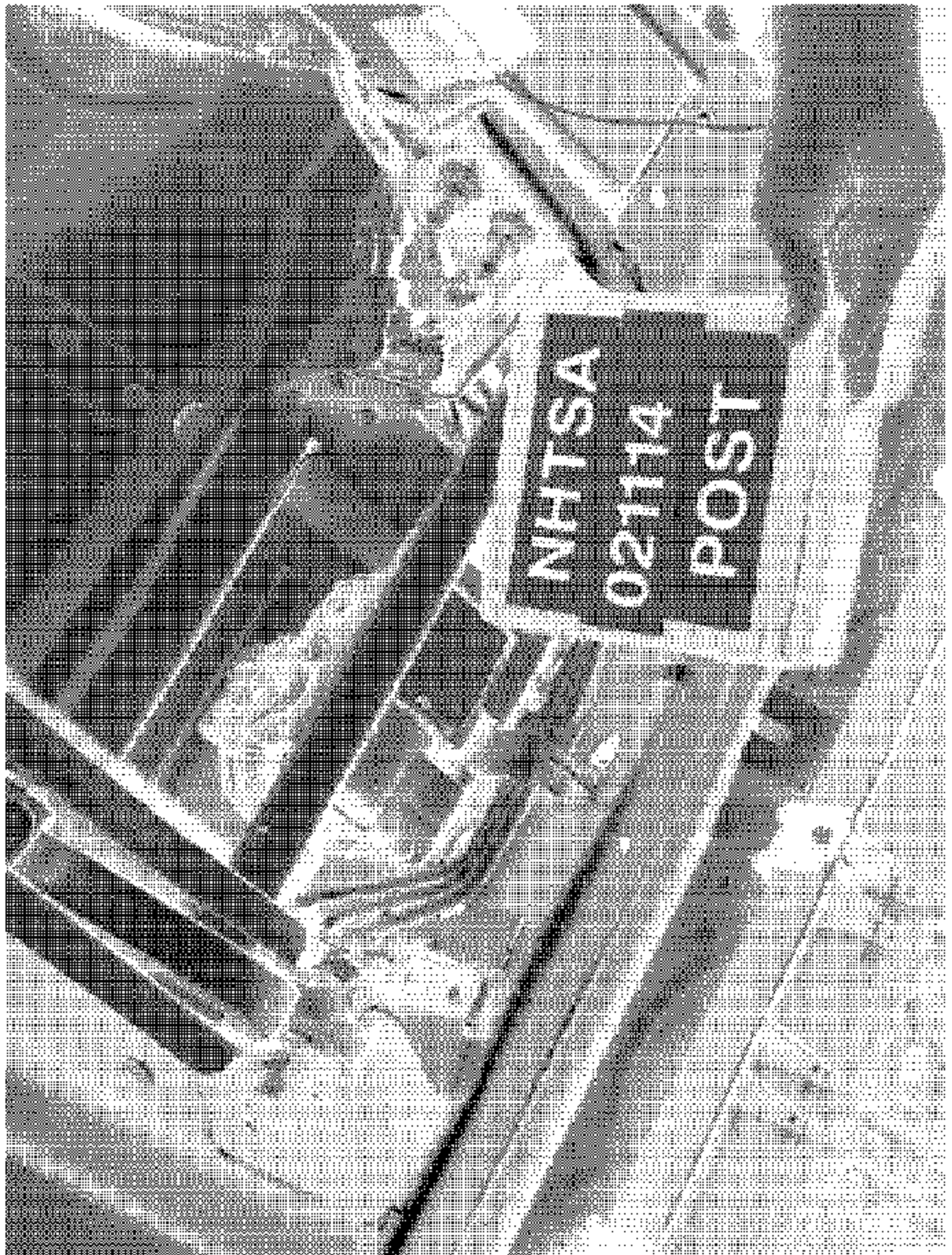


Image 33 Post-Test Fuel Lines View

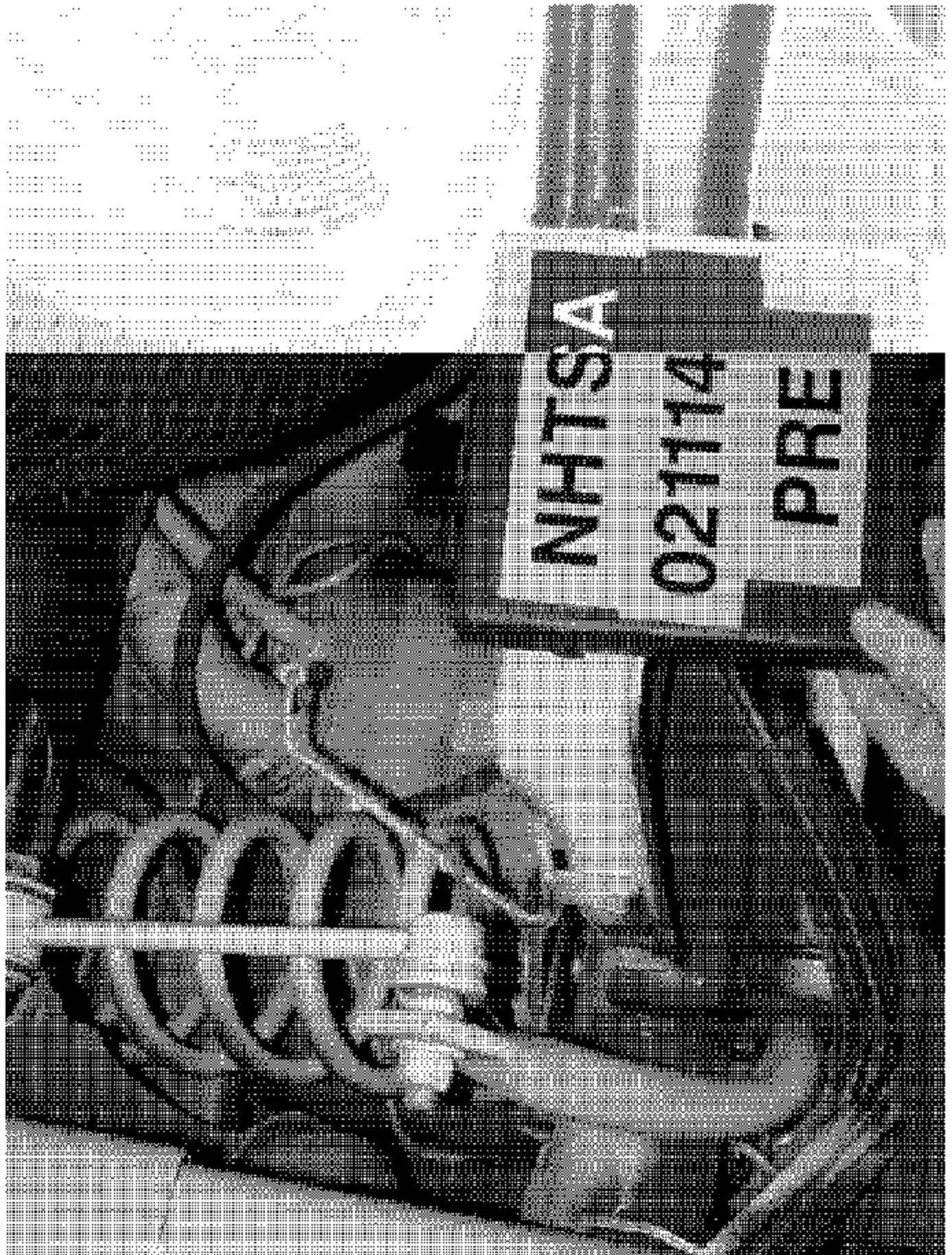


Image 34 Pre-Test Fuel Filler Neck - View 1

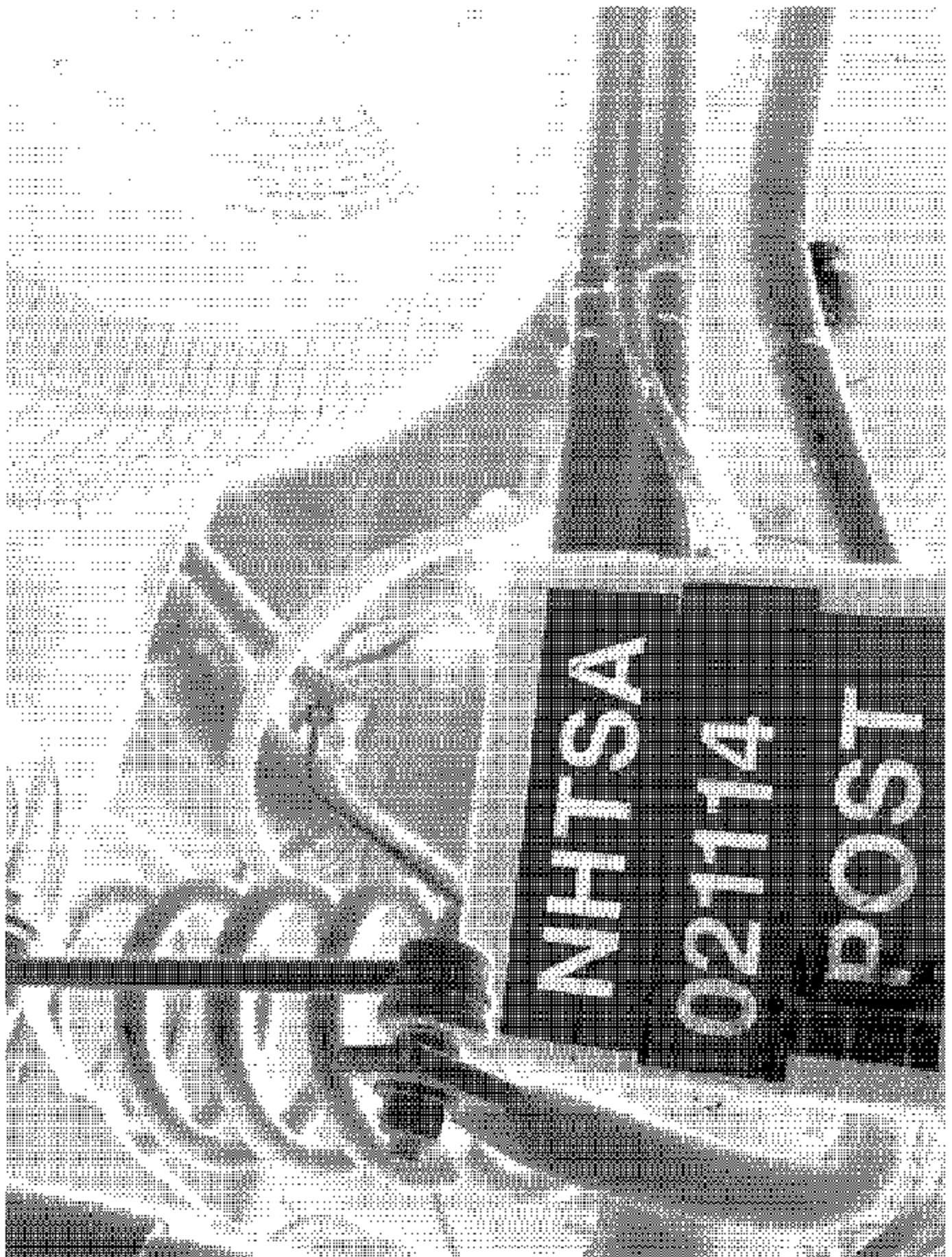


Image 35 Post-Test Fuel Filler Neck - View 1

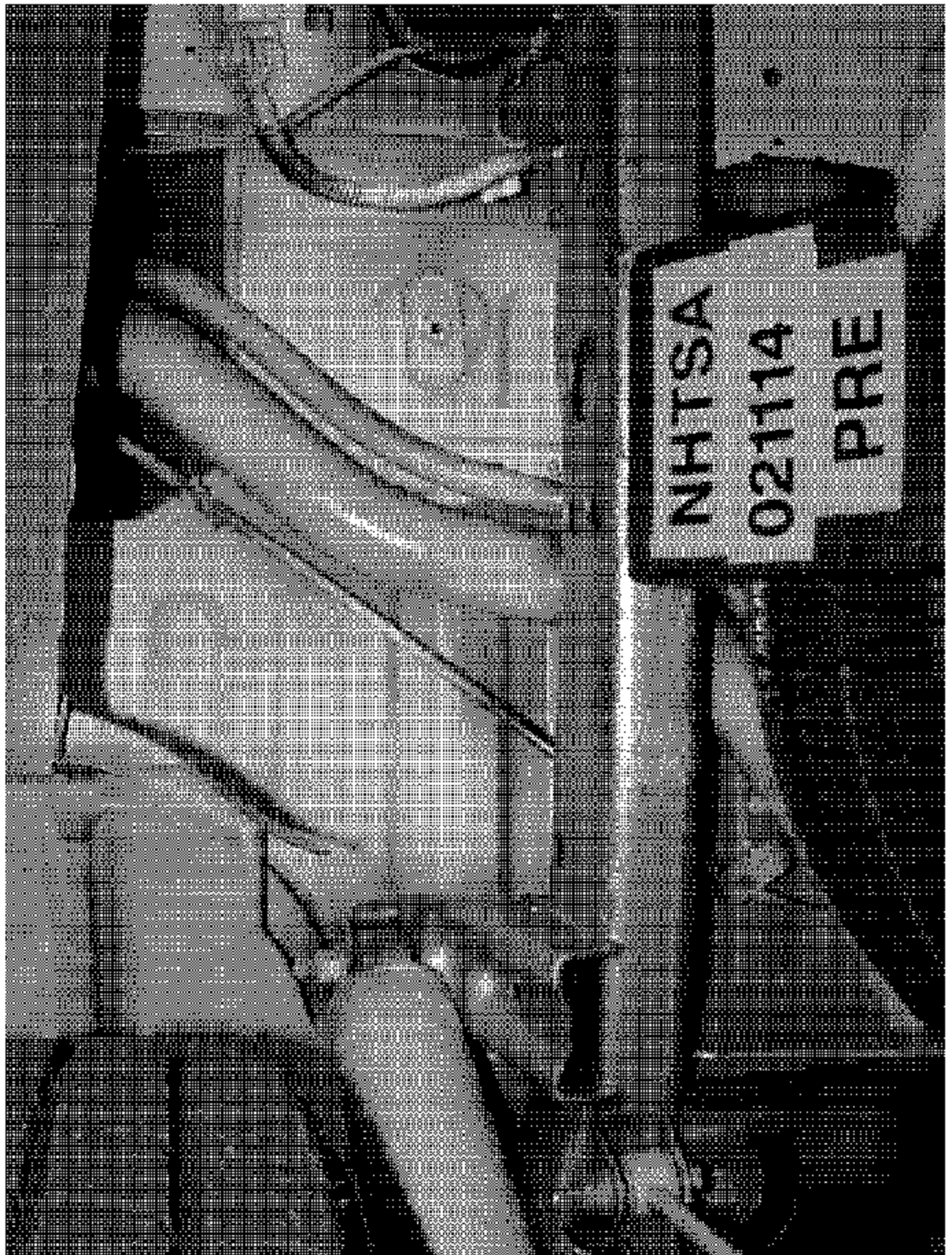


Image 36 Pre-Test Fuel Filler Neck - View 2

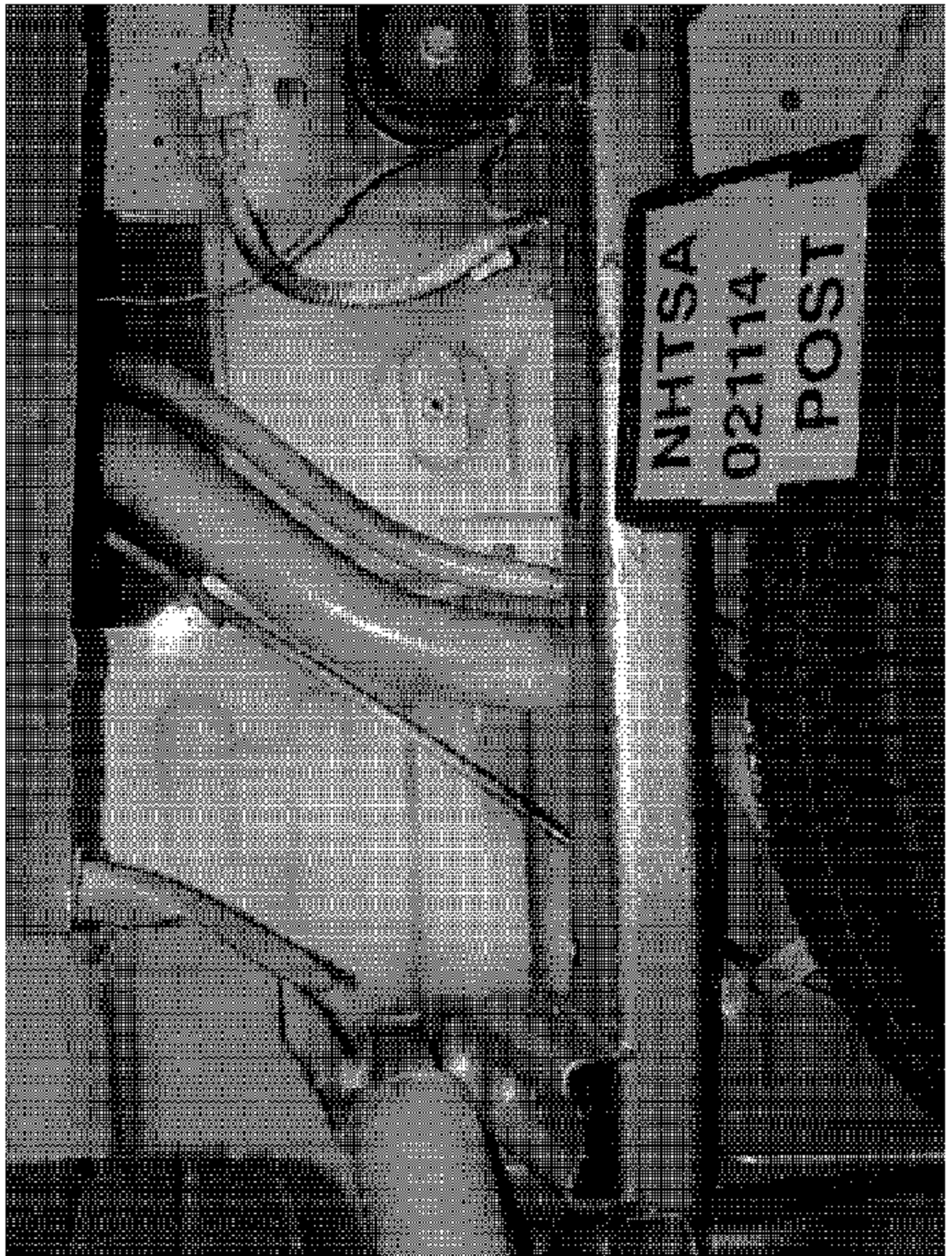


Image 37 Post-Test Fuel Filler Neck - View 2

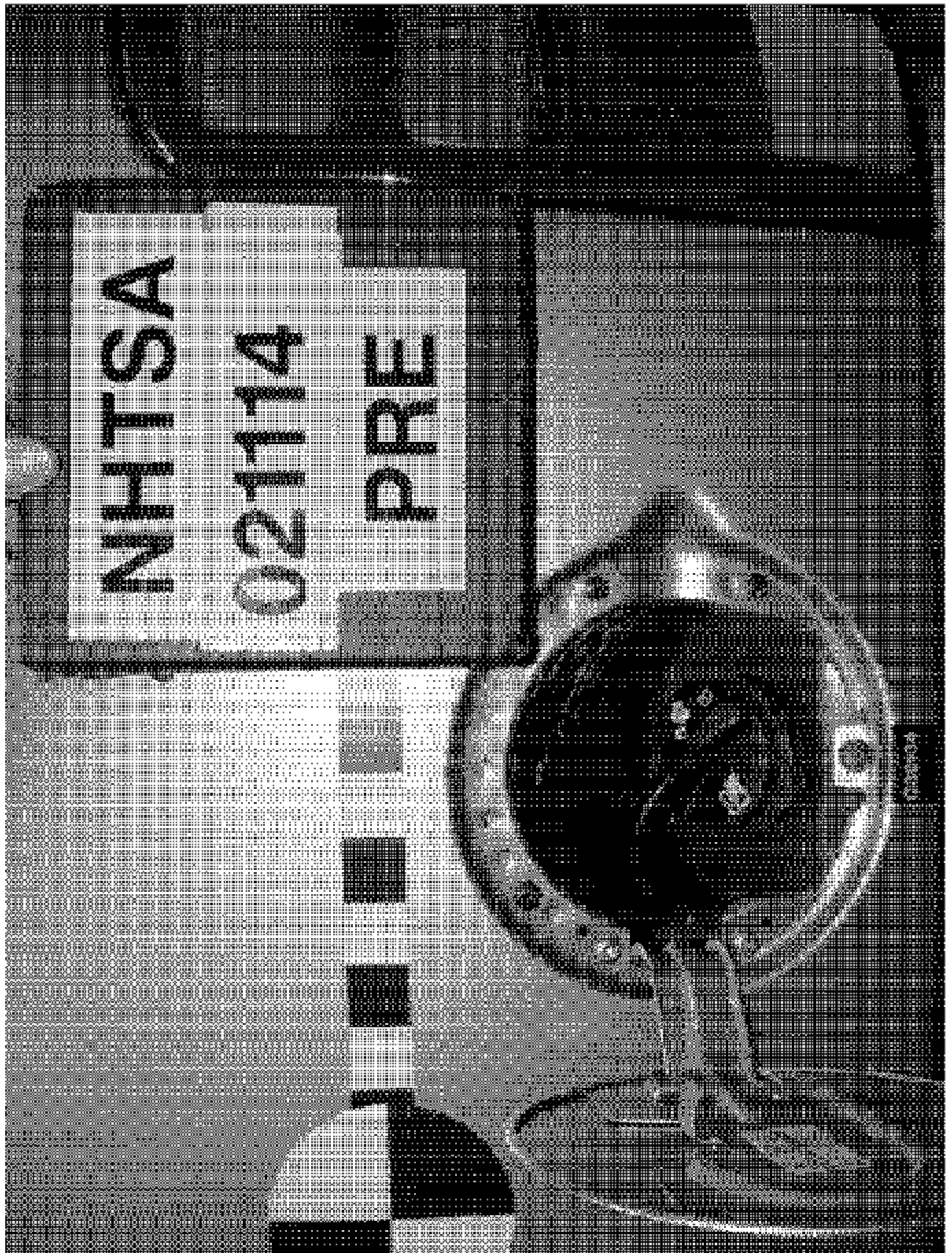


Image 38 Pre-Test Fuel Filler Cap View

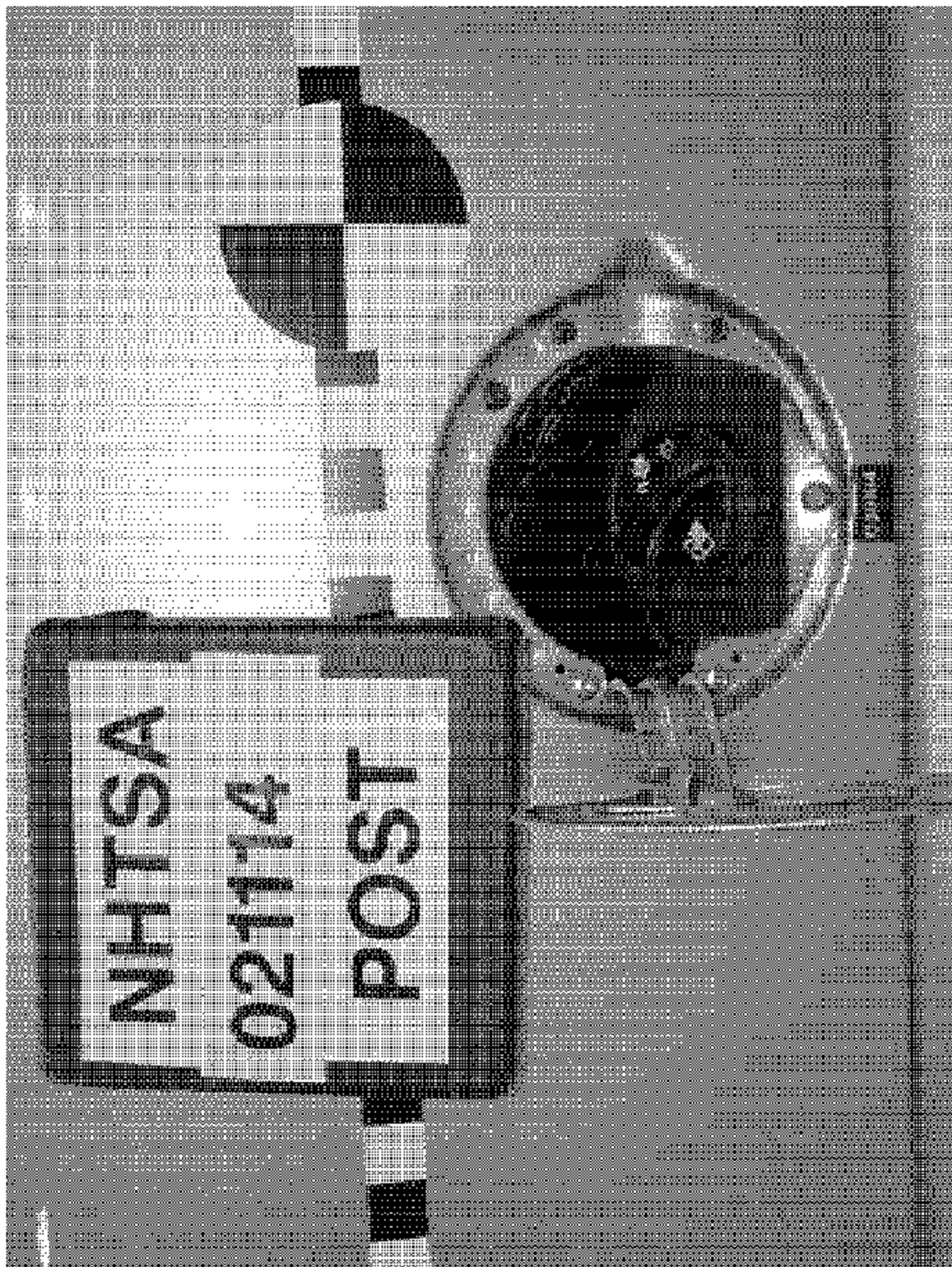


Image 39 Post-Test Fuel Filler Cap View

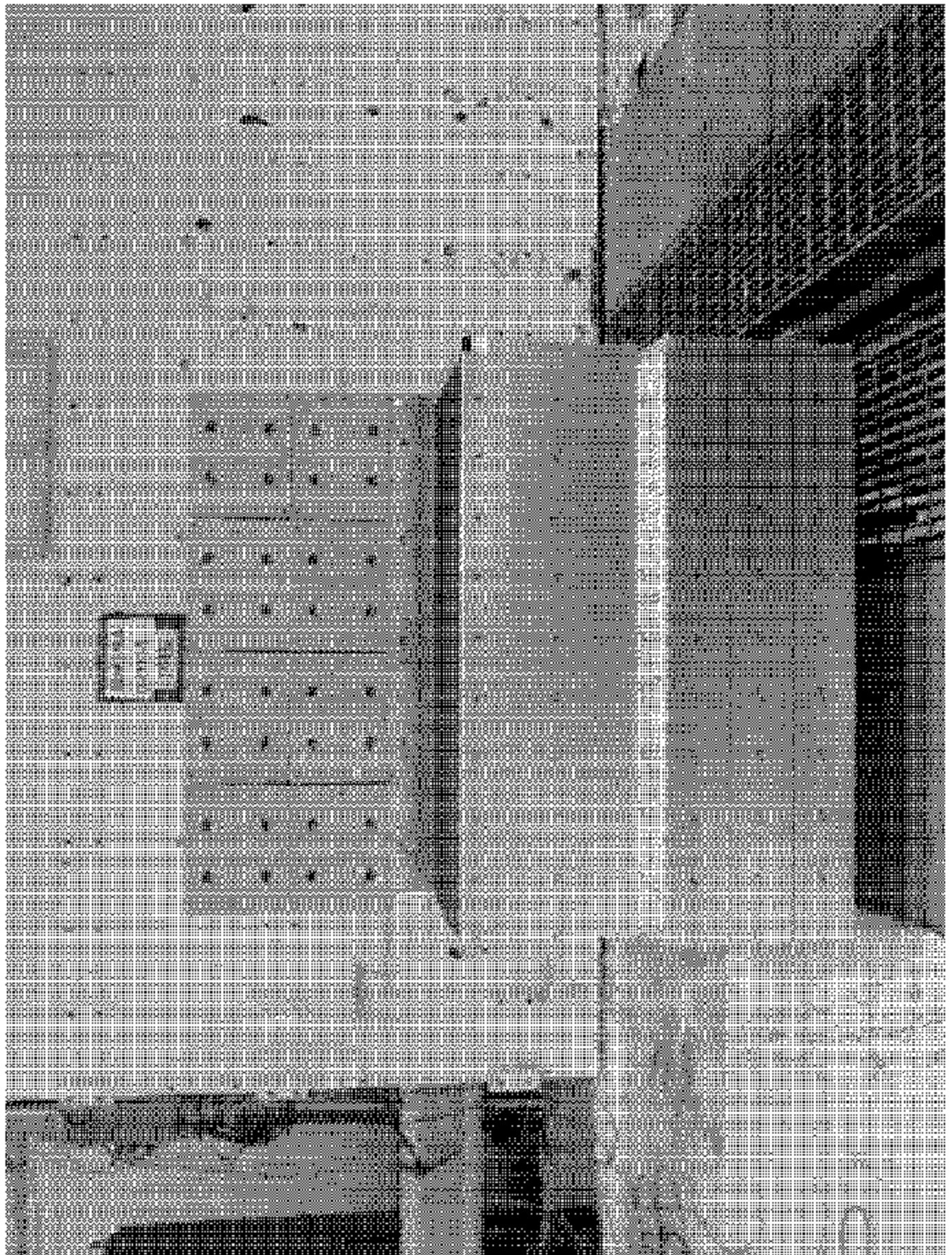


Image 40 Pre-Test Offset Barrier Face Front View



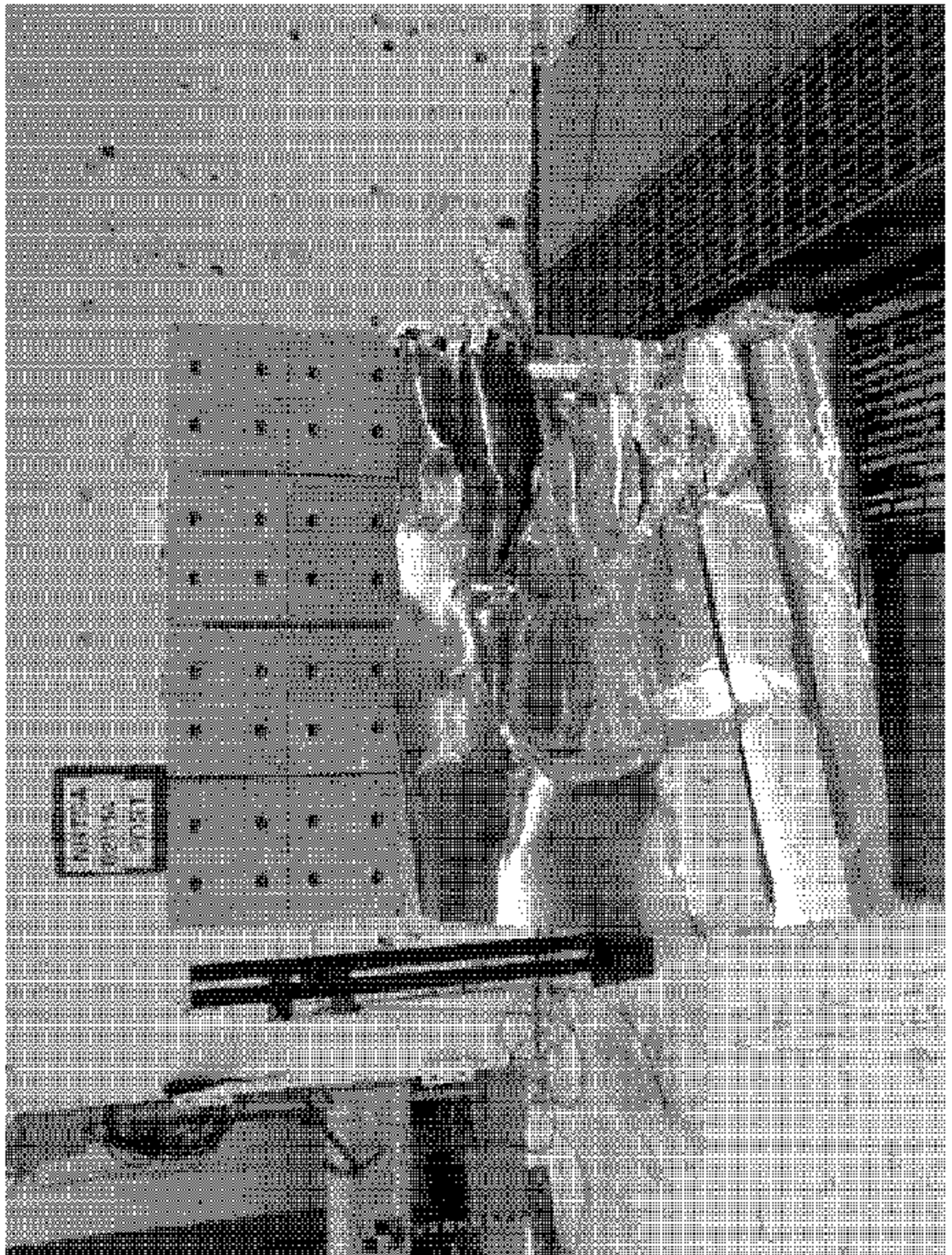


Image 41 Post-Test Offset Barrier Face Front View

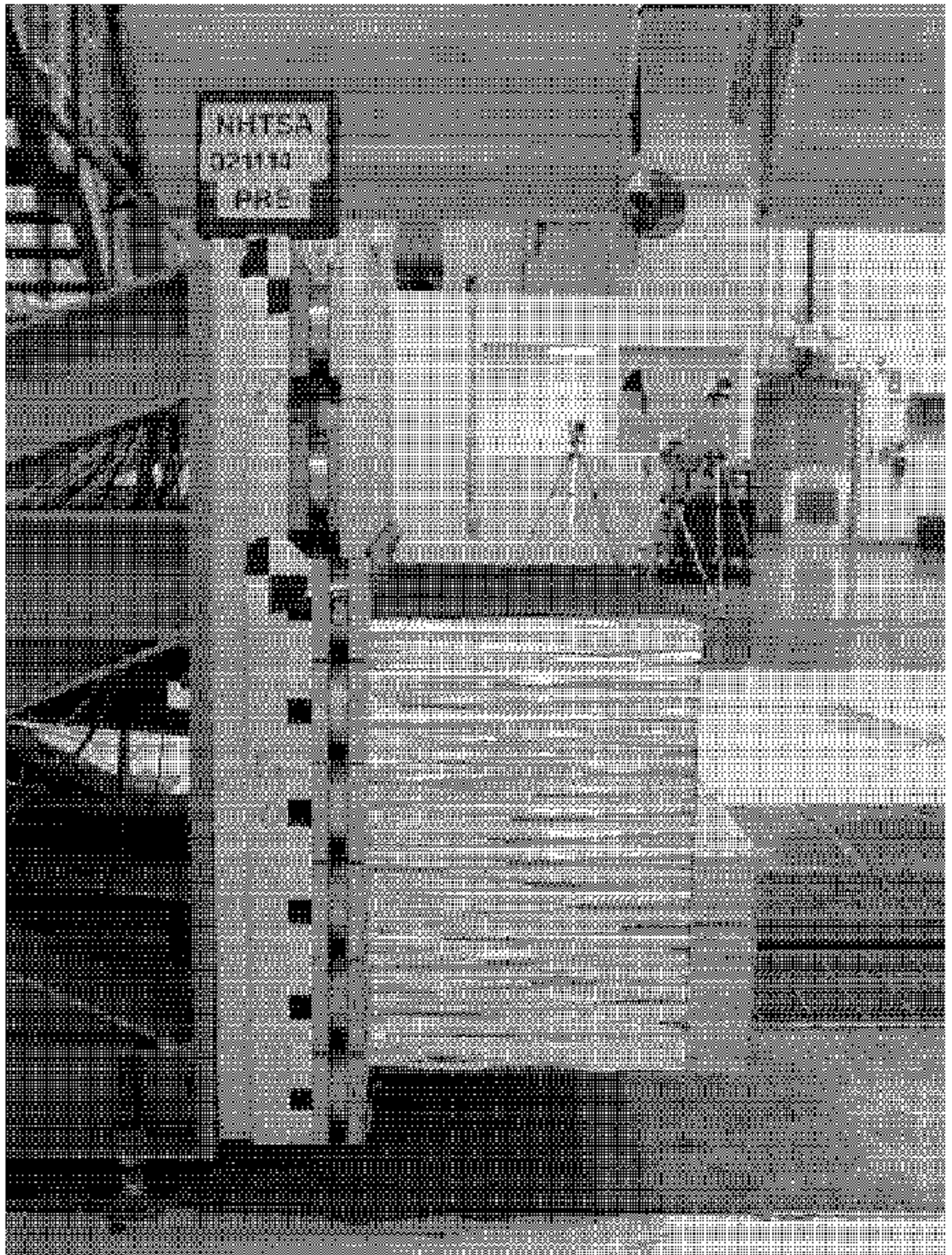


Image 42 Pre-Test Offset Barrier Face Left Side View

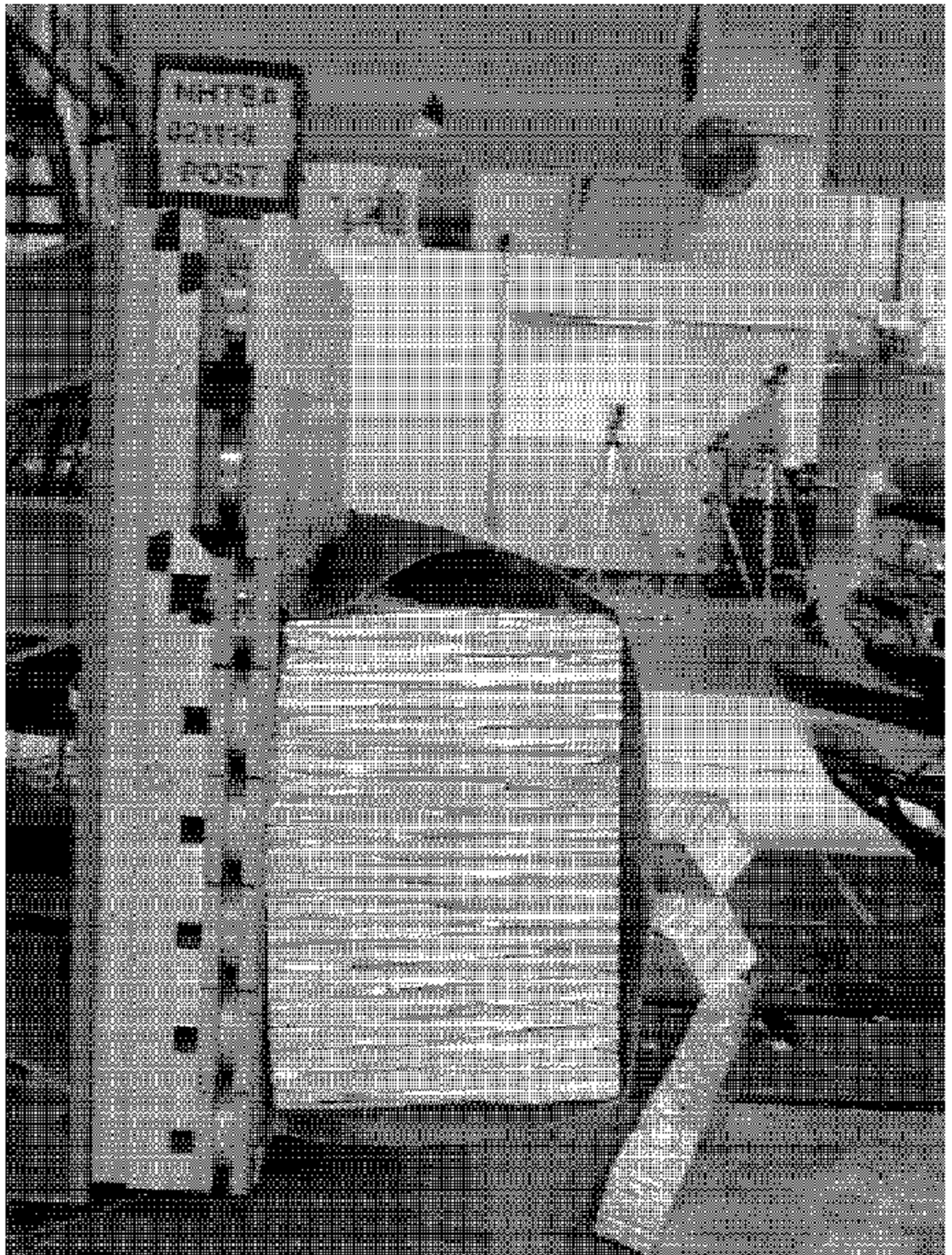


Image 43 Post-Test Offset Barrier Face Left Side View

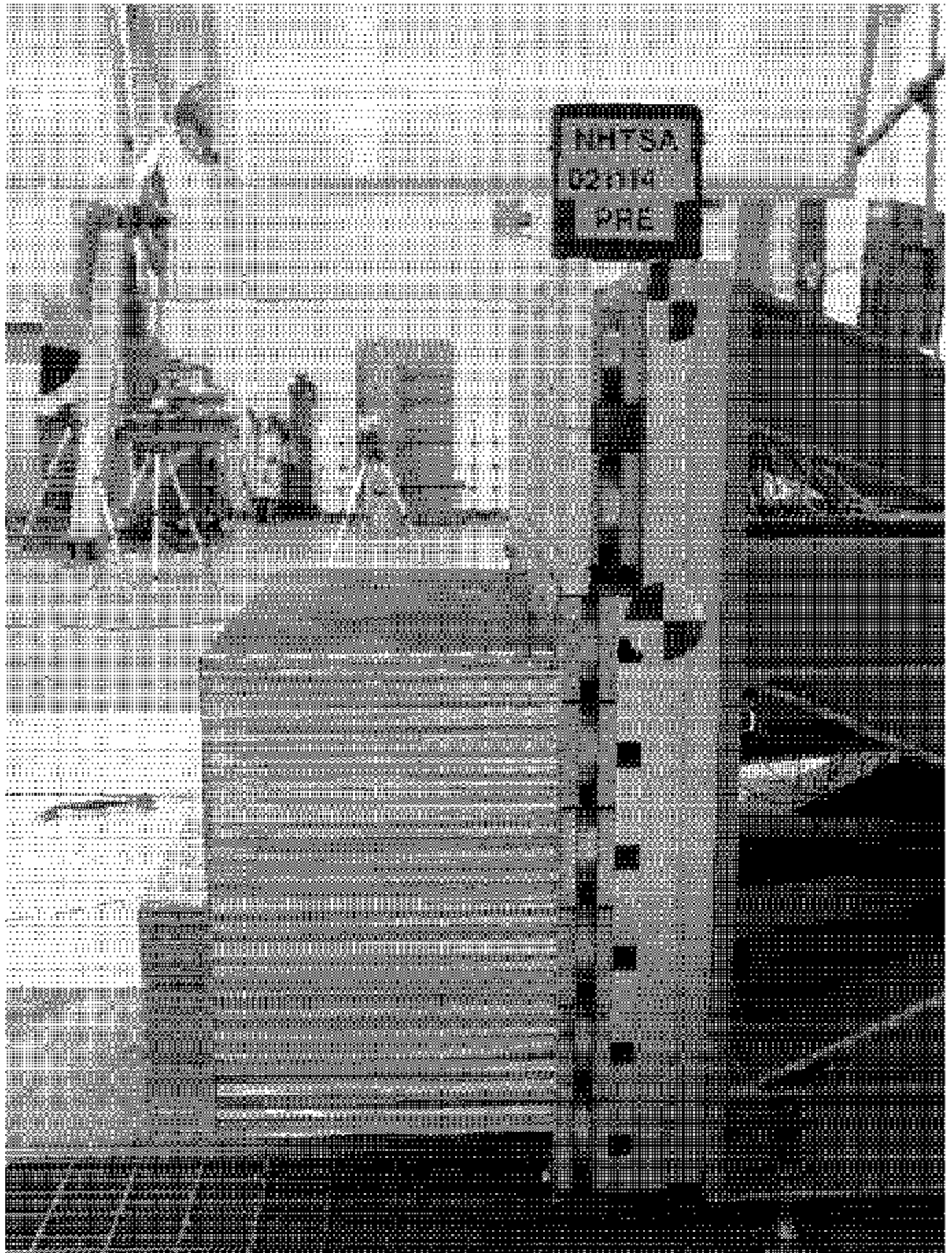


Image 44 Pre-Test Offset Barrier Face Right Side View

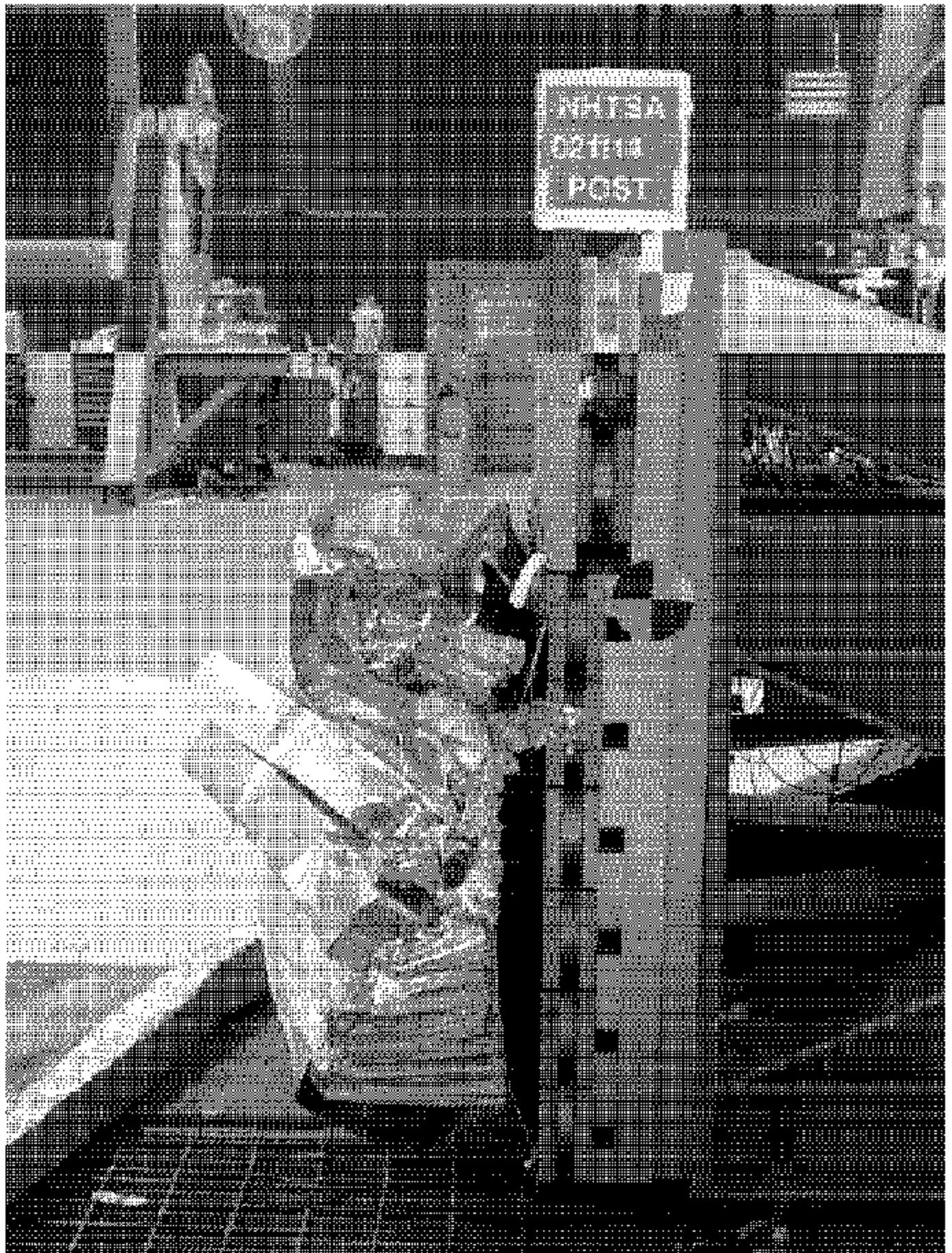


Image 45 Post-Test Offset Barrier Face Right Side View

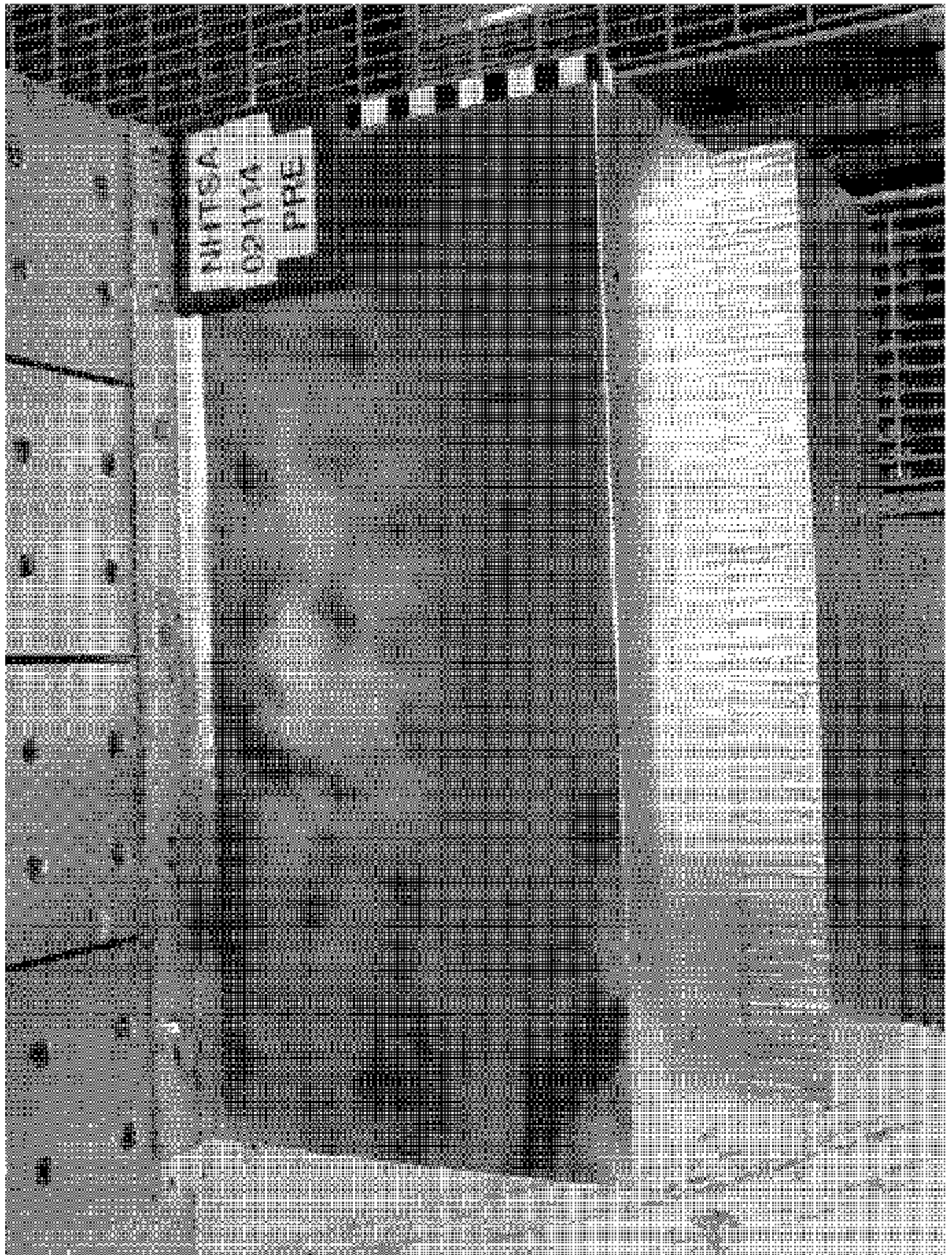


Image 46 Pre-Test Offset Barrier Face Overhead View

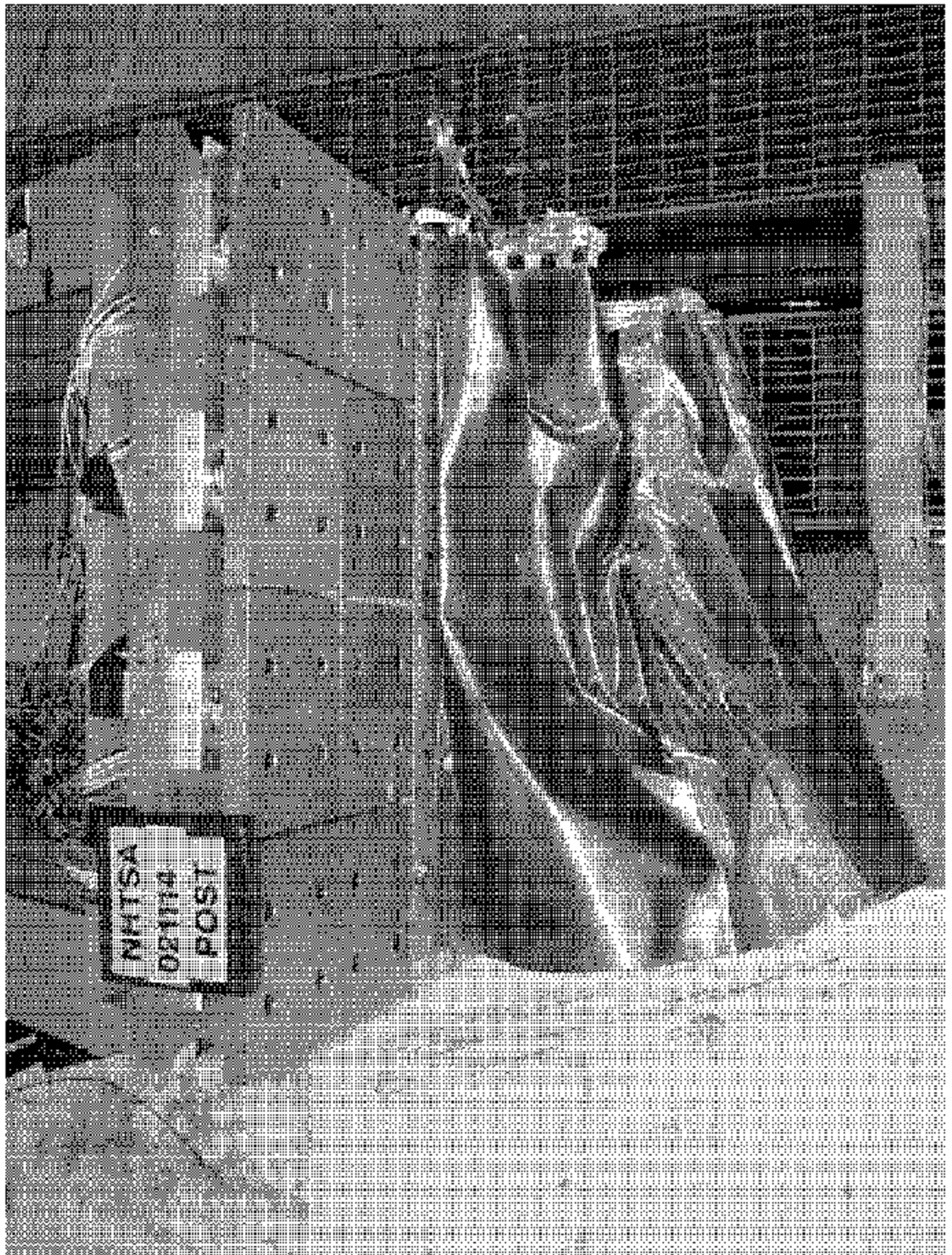


Image 47 Post-Test Offset Barrier Face Overhead View



Image 48 Pre-Test Driver Dummy Front View



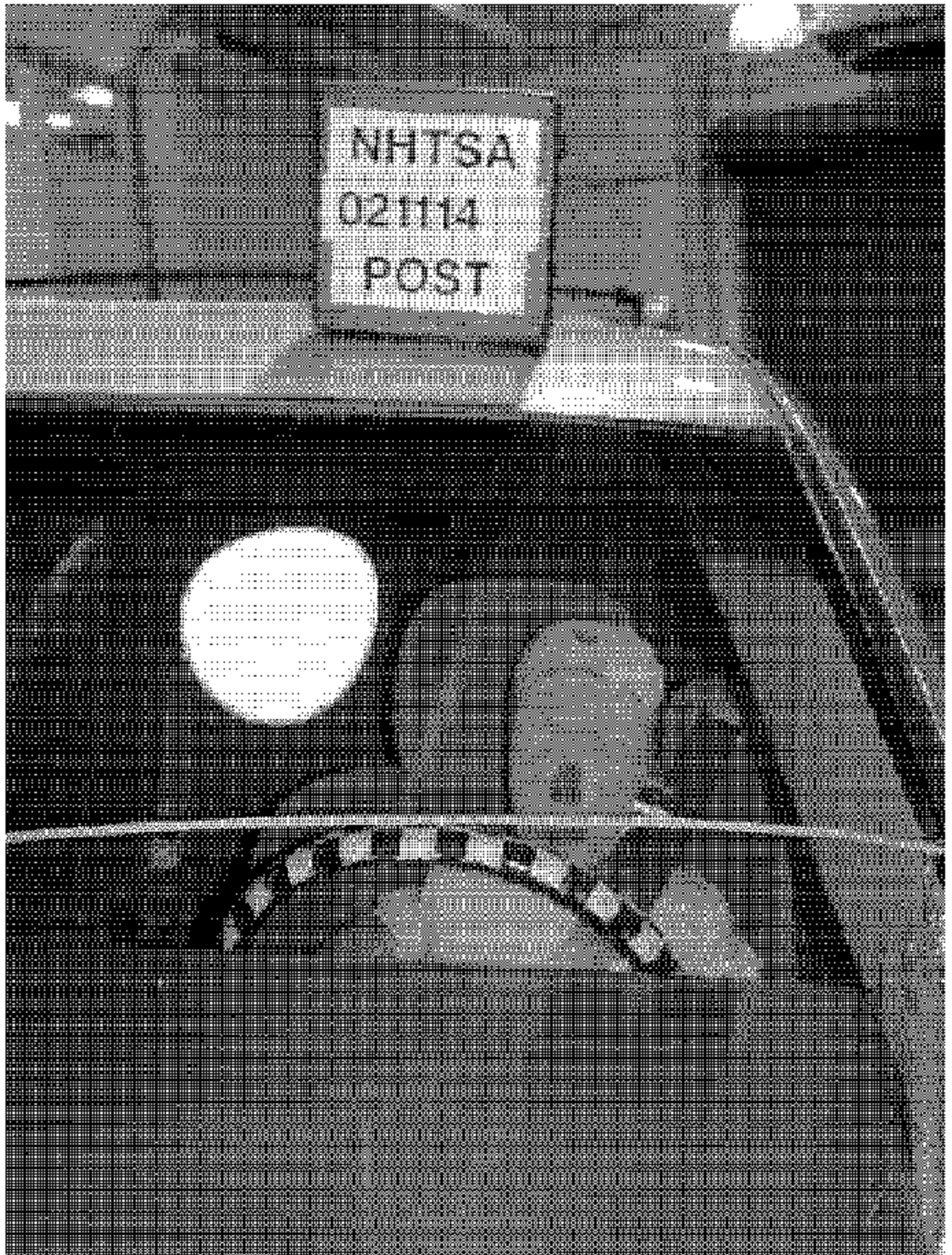


Image 49 Post-Test Driver Dummy Front View

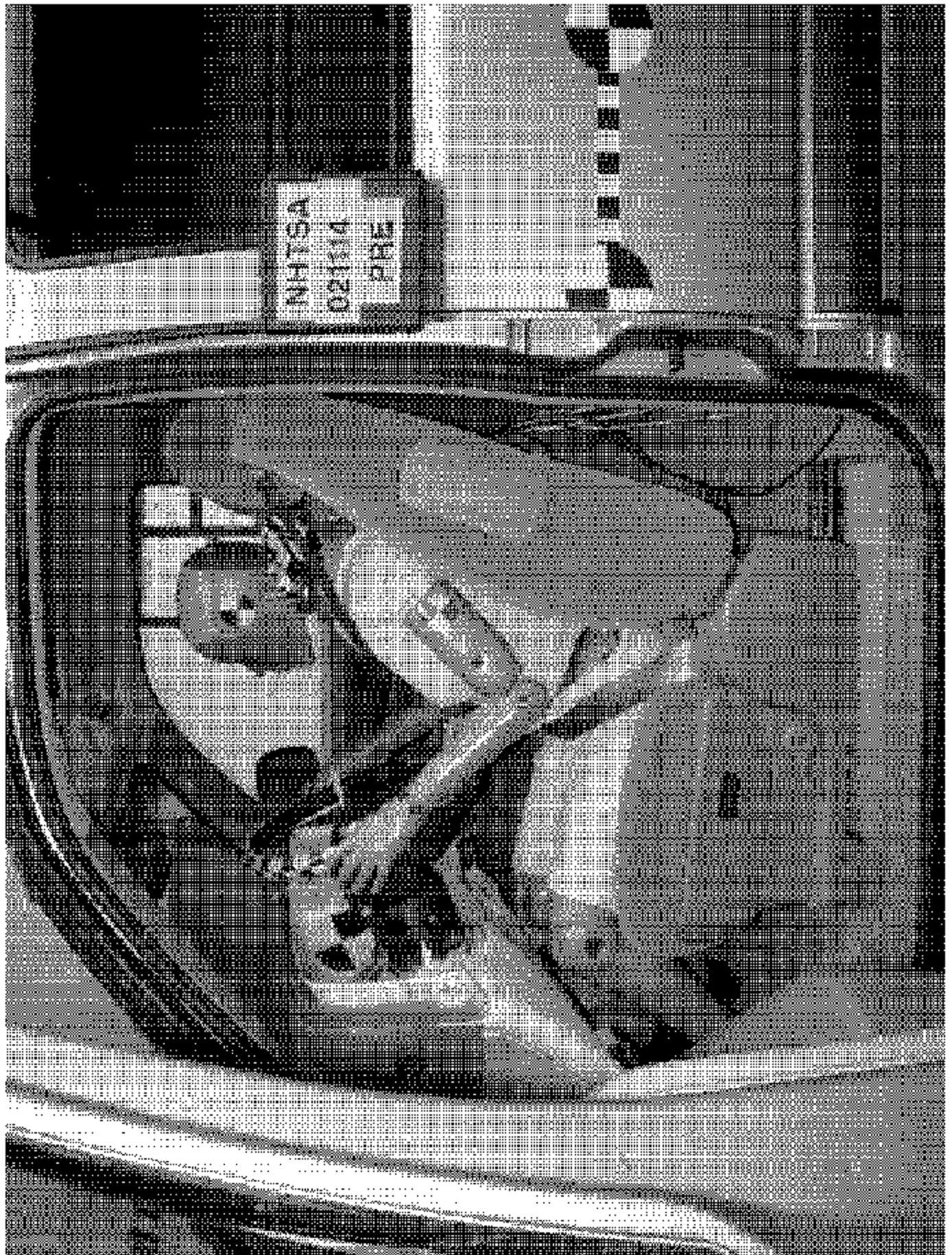


Image 50 Pre-Test Driver Dummy Position View

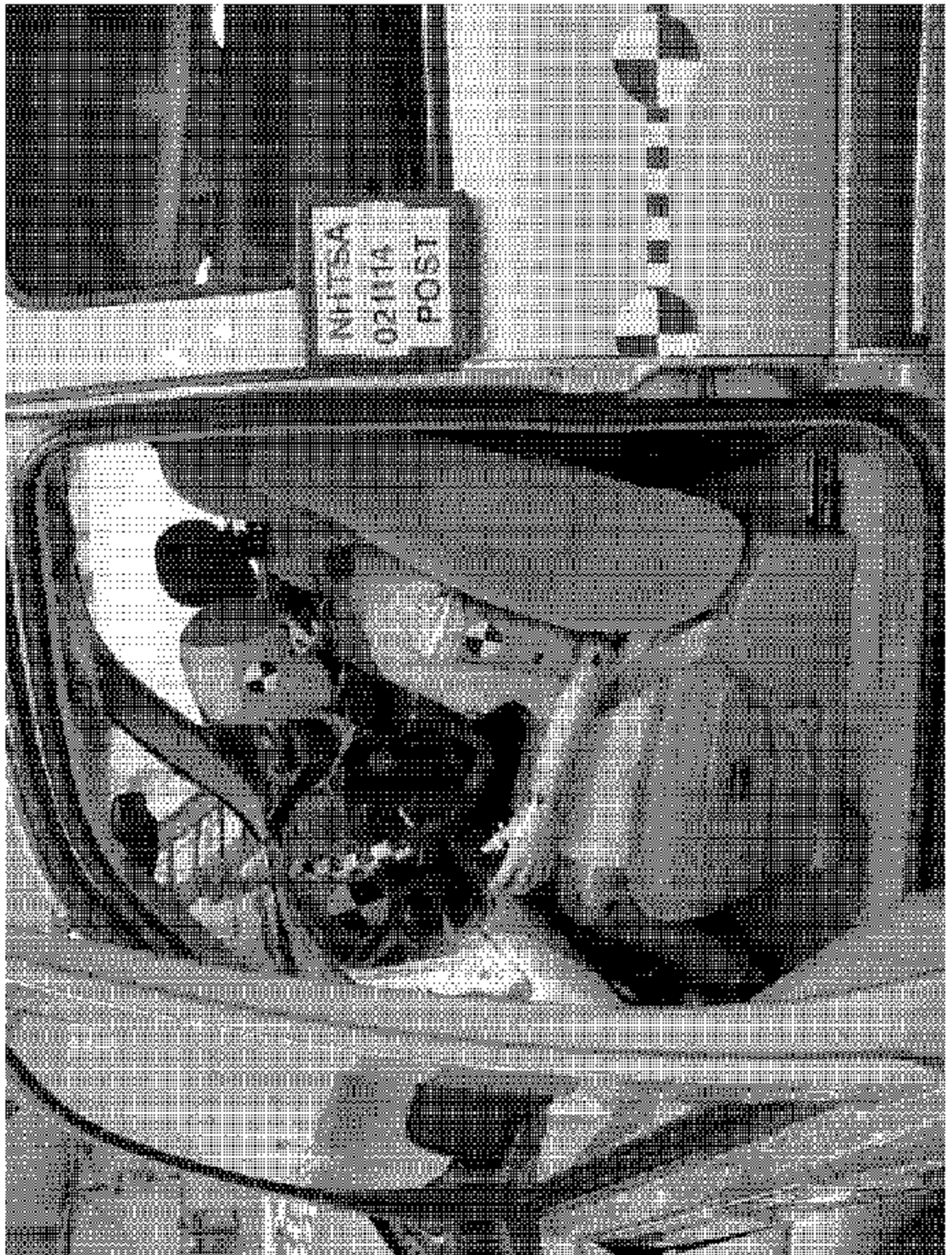


Image 51 Post-Test Driver Dummy Position View

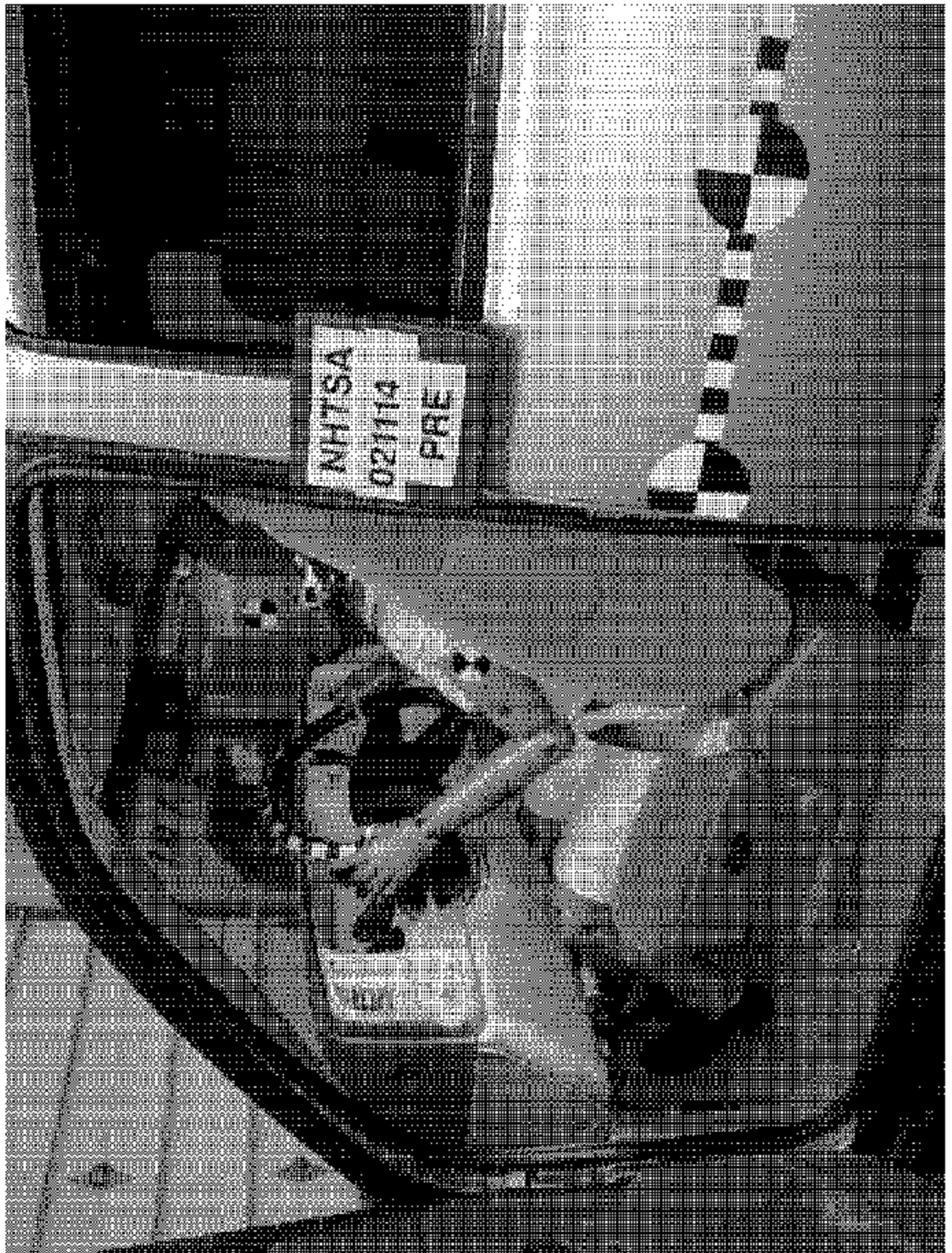


Image 52 Pre-Test Driver Dummy & Vehicle Intrusion View

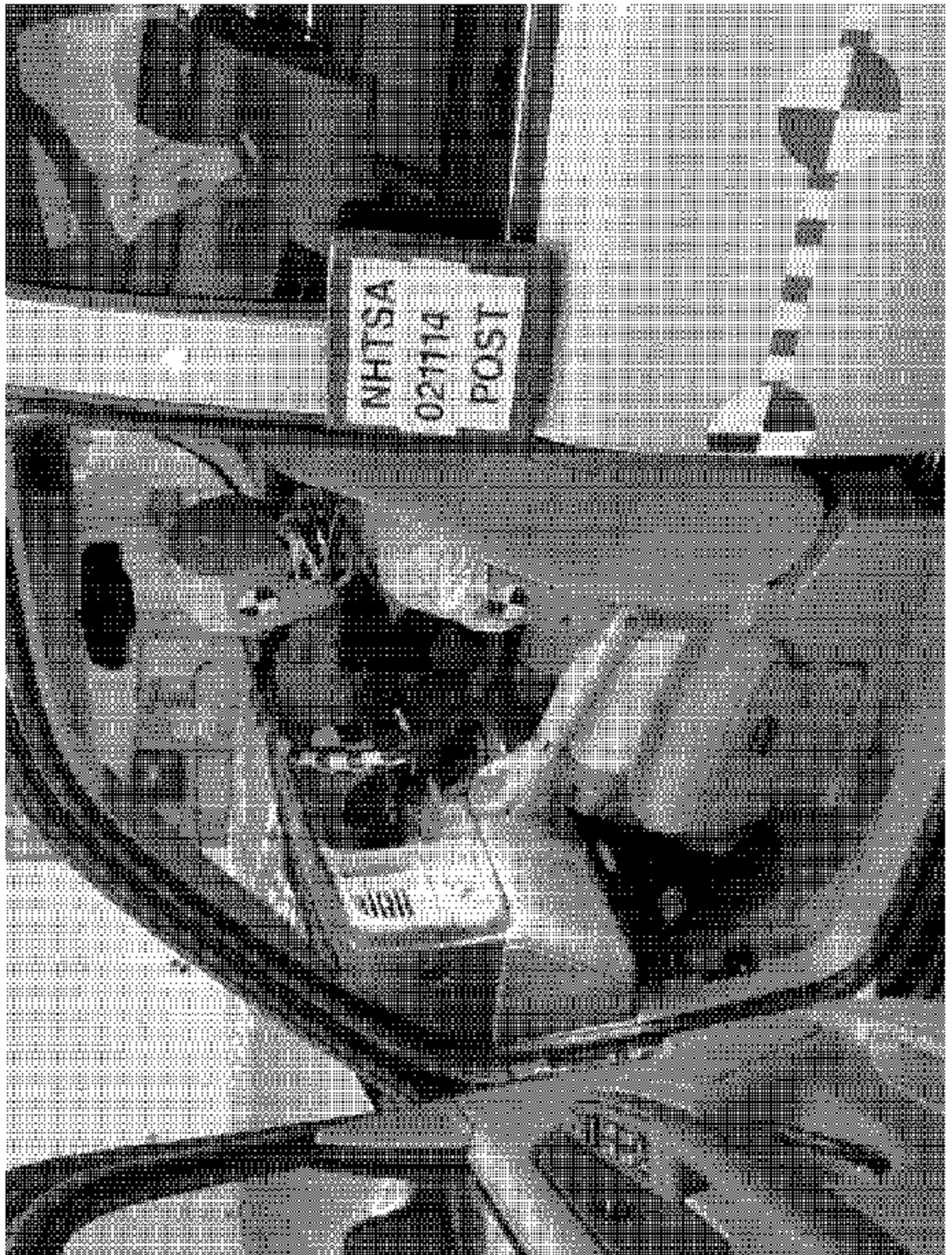


Image 53 Post-Test Driver Dummy & Vehicle Intrusion View

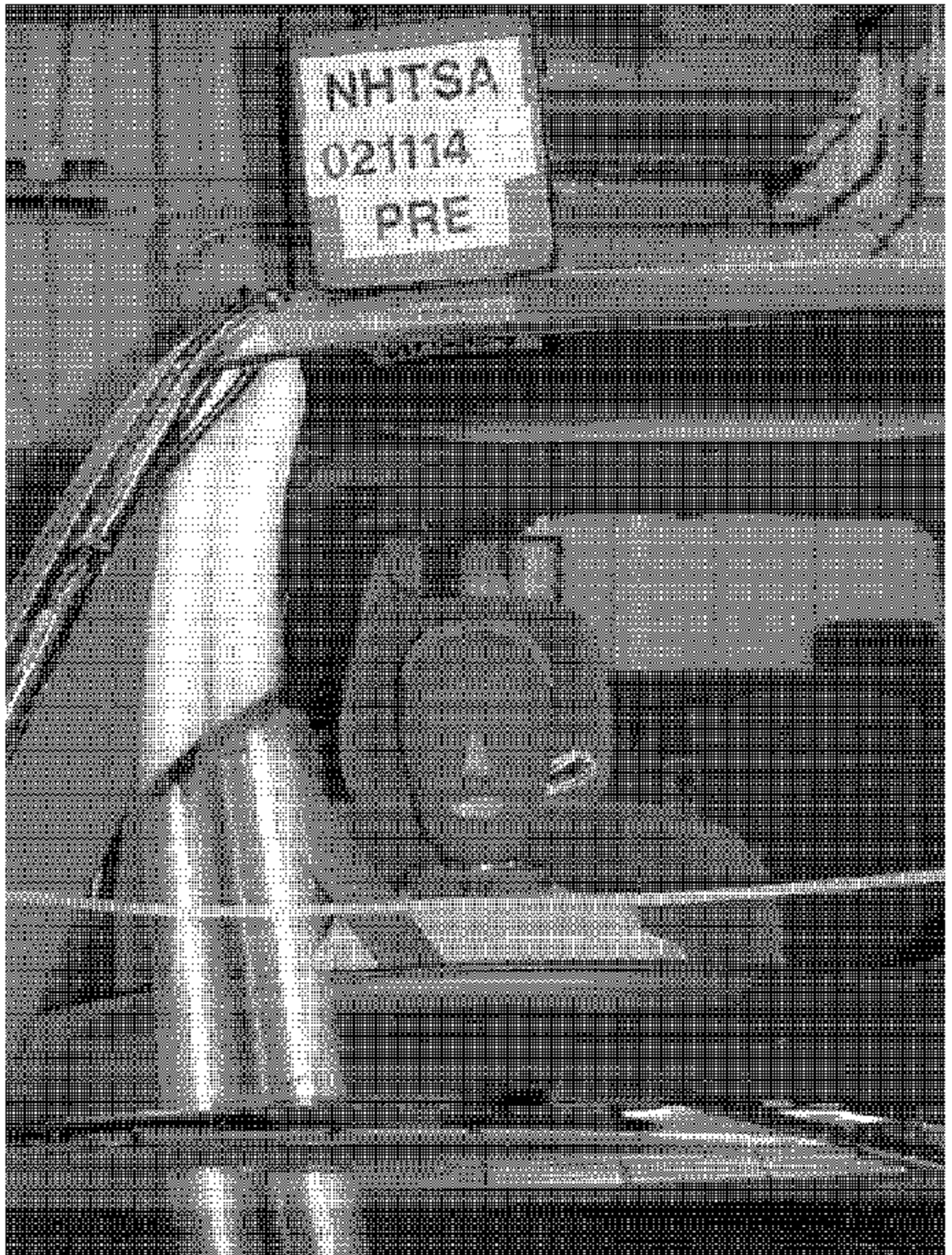


Image 54 Pre-Test Passenger Dummy Front View

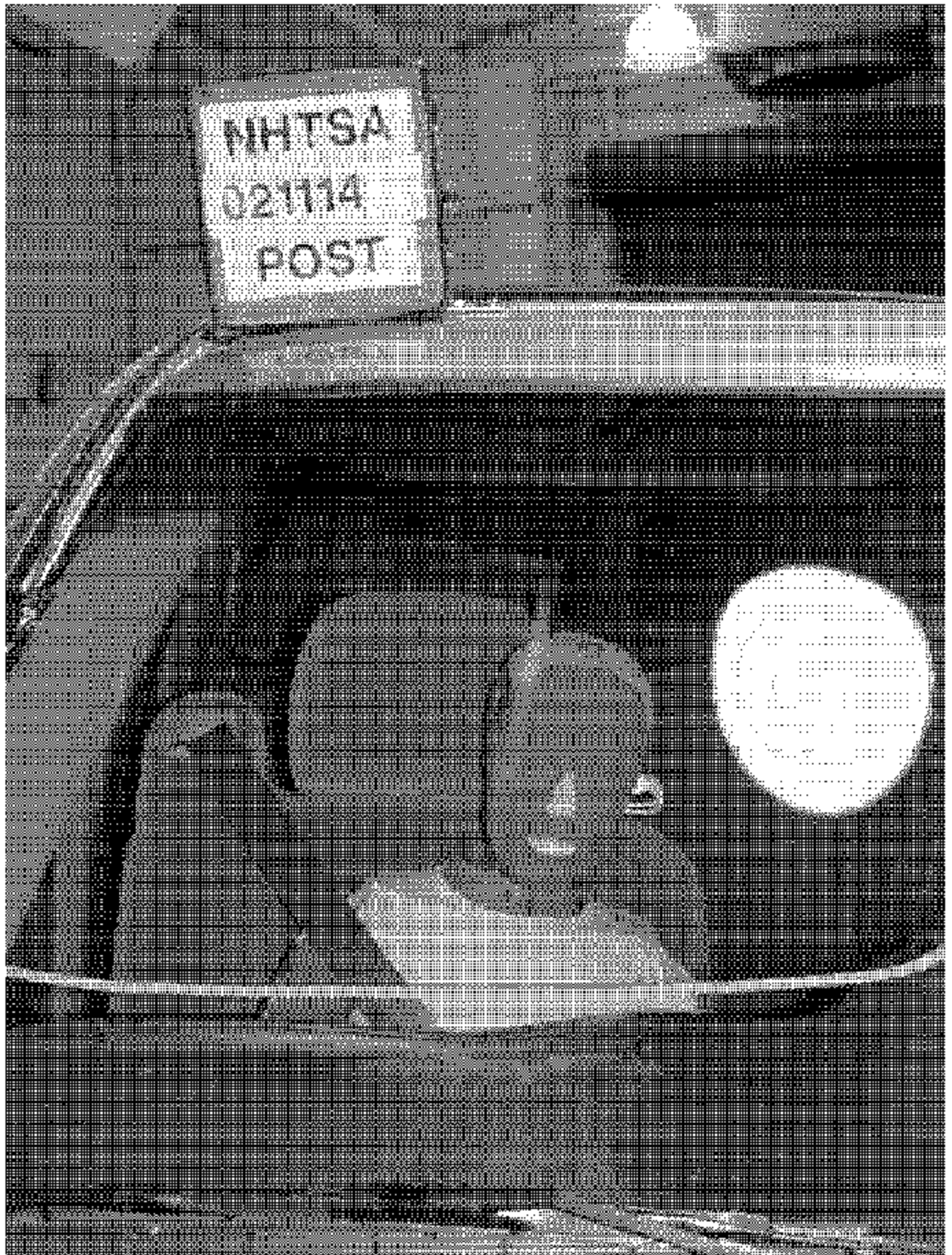


Image 55 Post-Test Passenger Dummy Front View

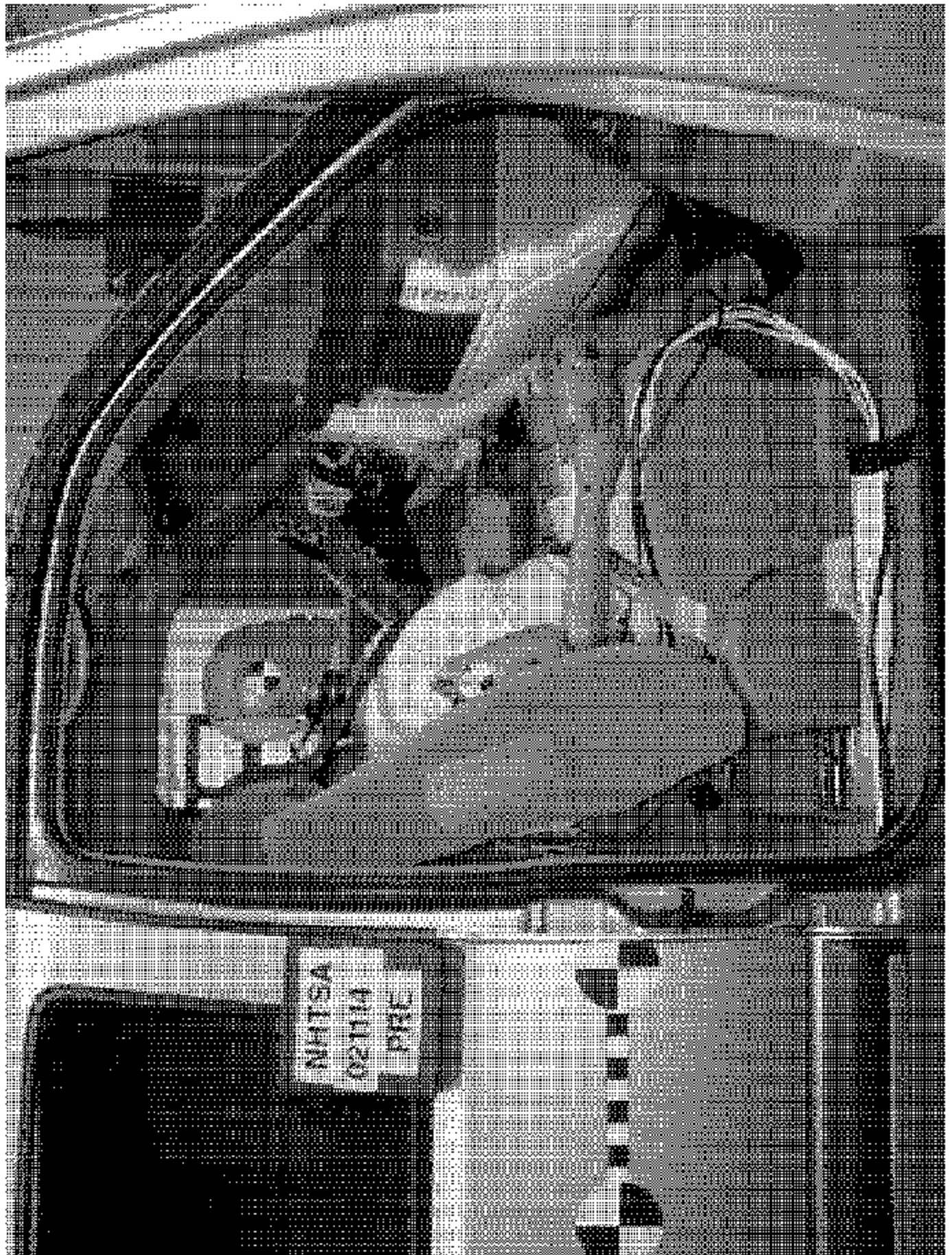


Image 56 Pre-Test Passenger Dummy Position View



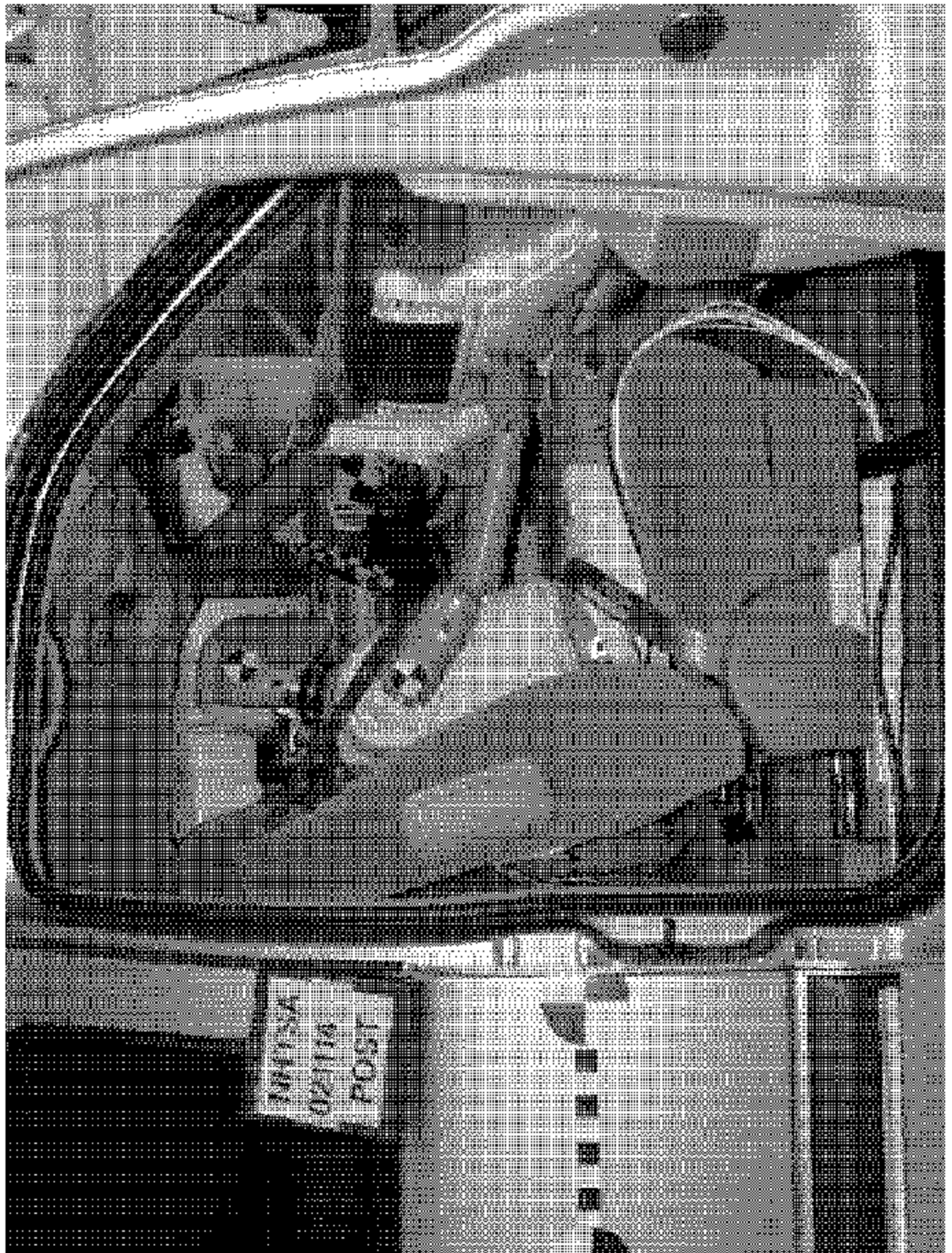


Image 57 Post-Test Passenger Dummy Position View

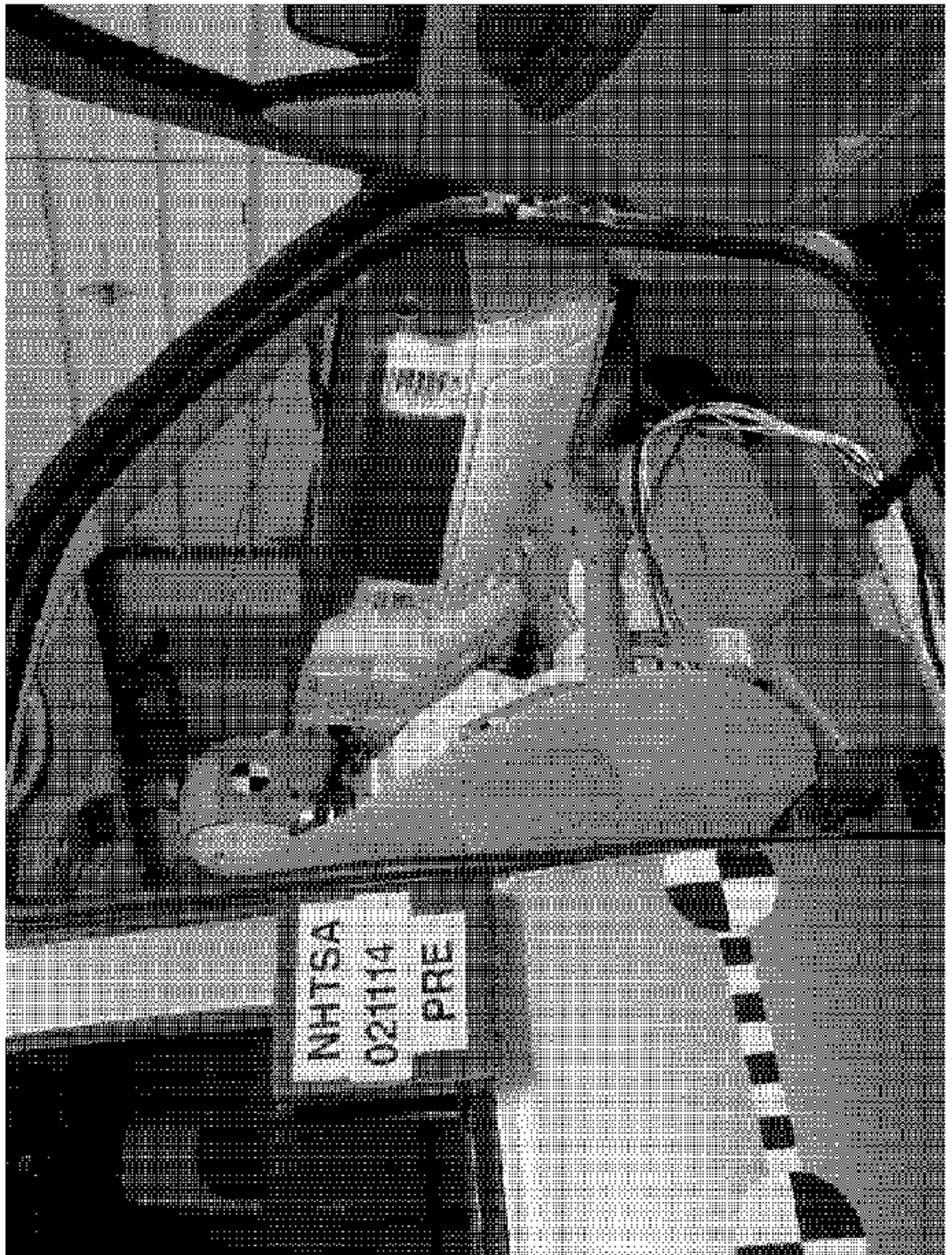


Image 58 Pre-Test Passenger Dummy & Vehicle Intrusion View

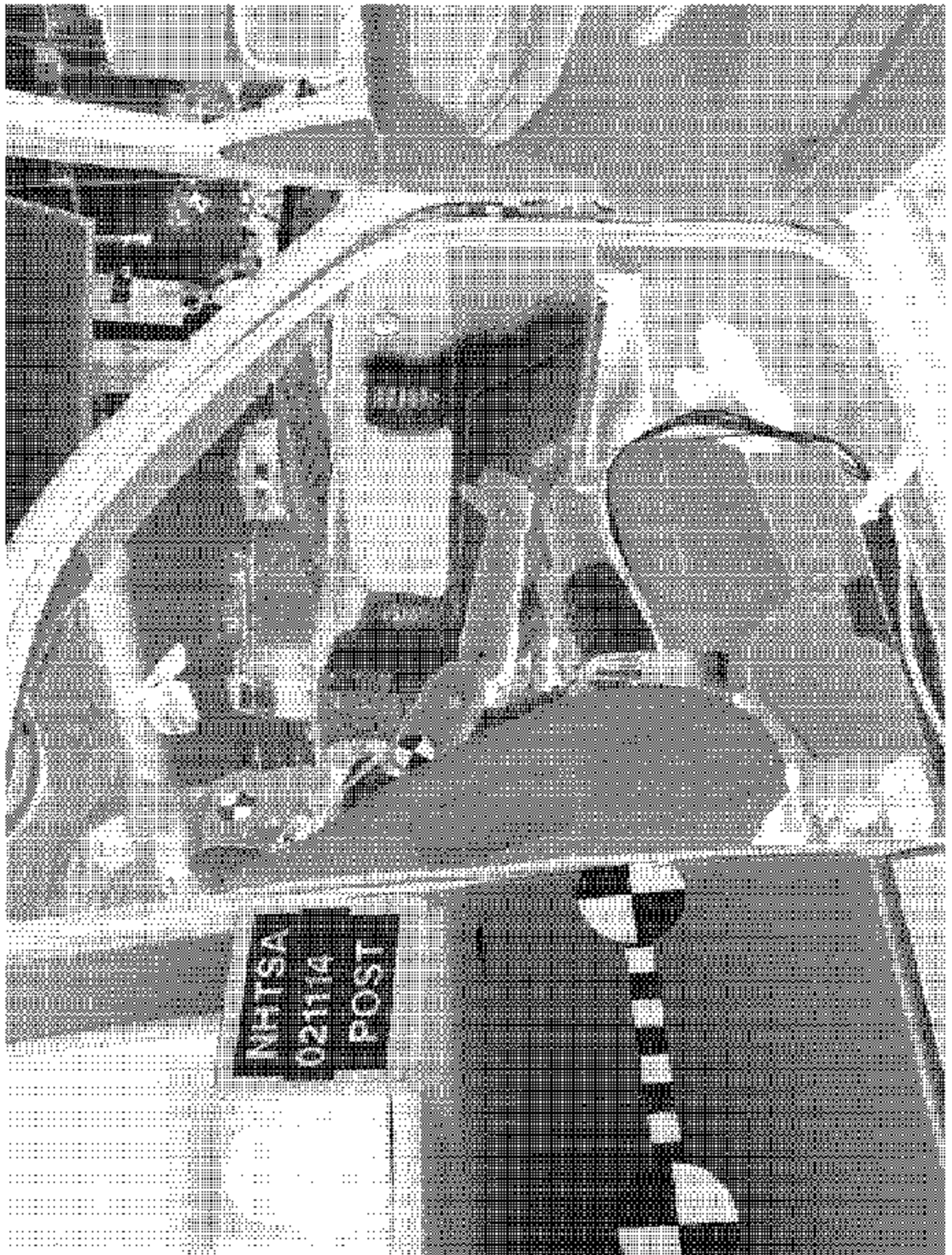


Image 59 Post-Test Passenger Dummy & Vehicle Intrusion View

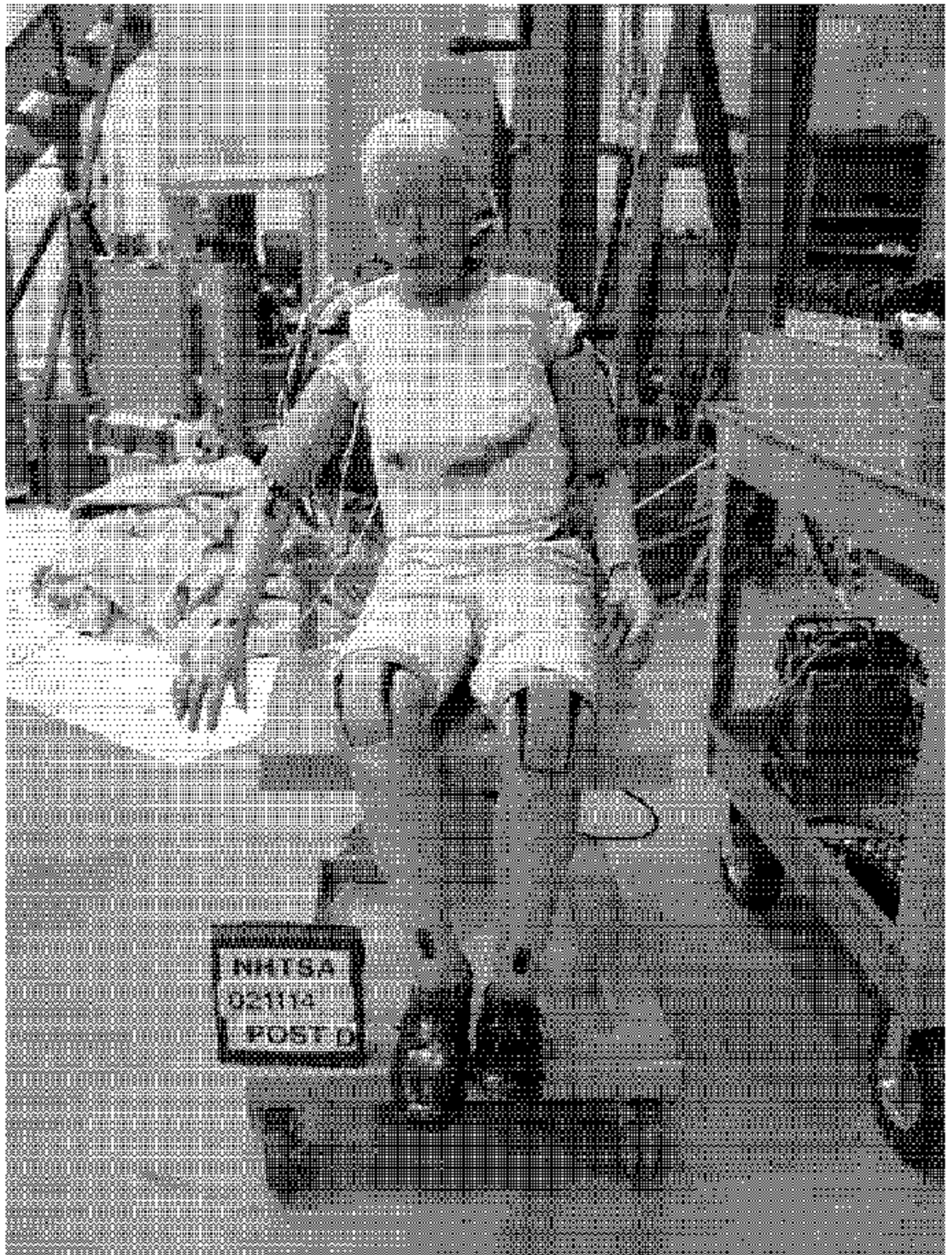


Image 60 Post-Test Driver Dummy View

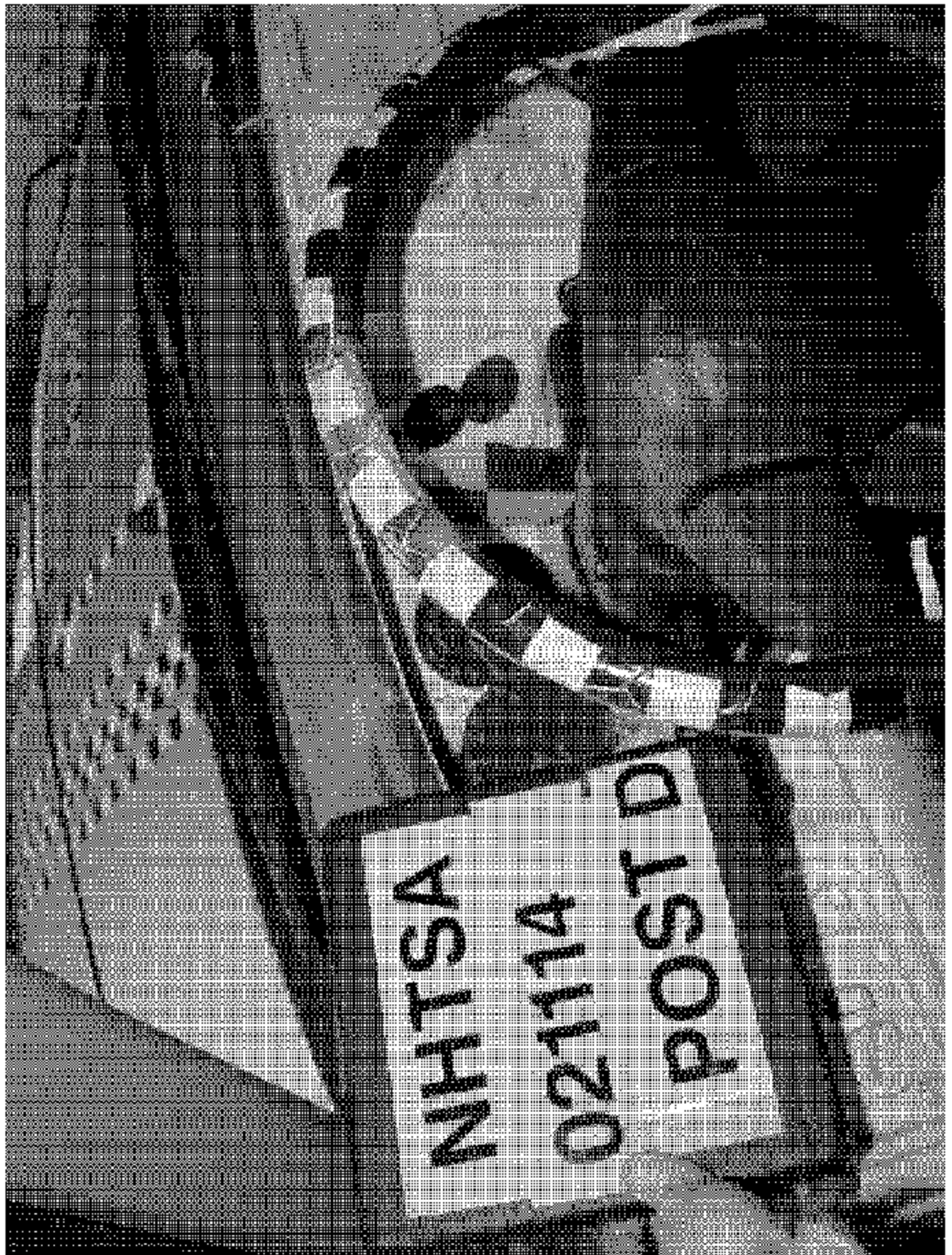


Image 61 Post-Test Driver Dummy Head Contact - View 1

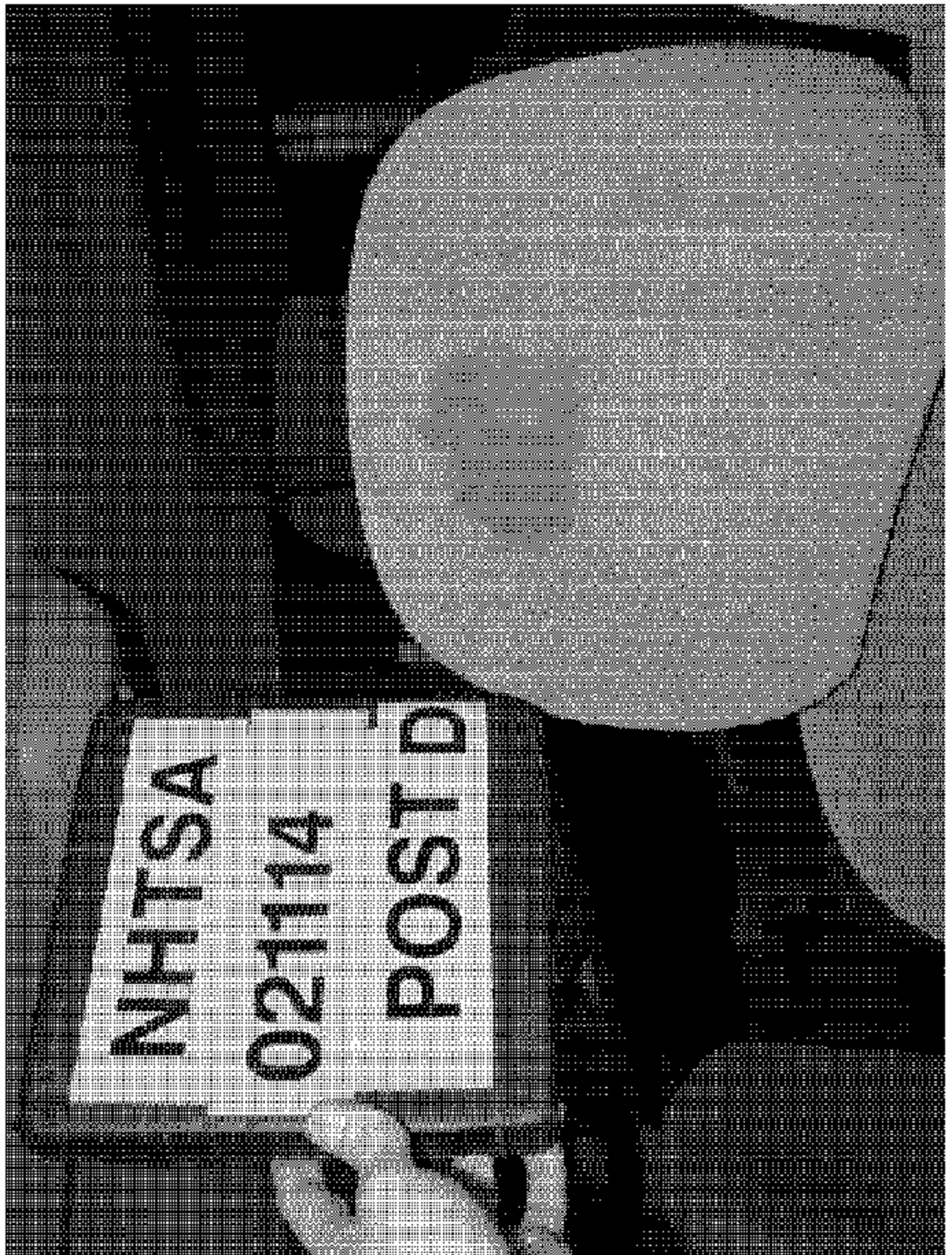


Image 62 Post-Test Driver Dummy Head Contact - View 2



Image 63 Pre-Test Driver Dummy Knee Bolster View



Image 64 Post-Test Driver Dummy Knee Contact View



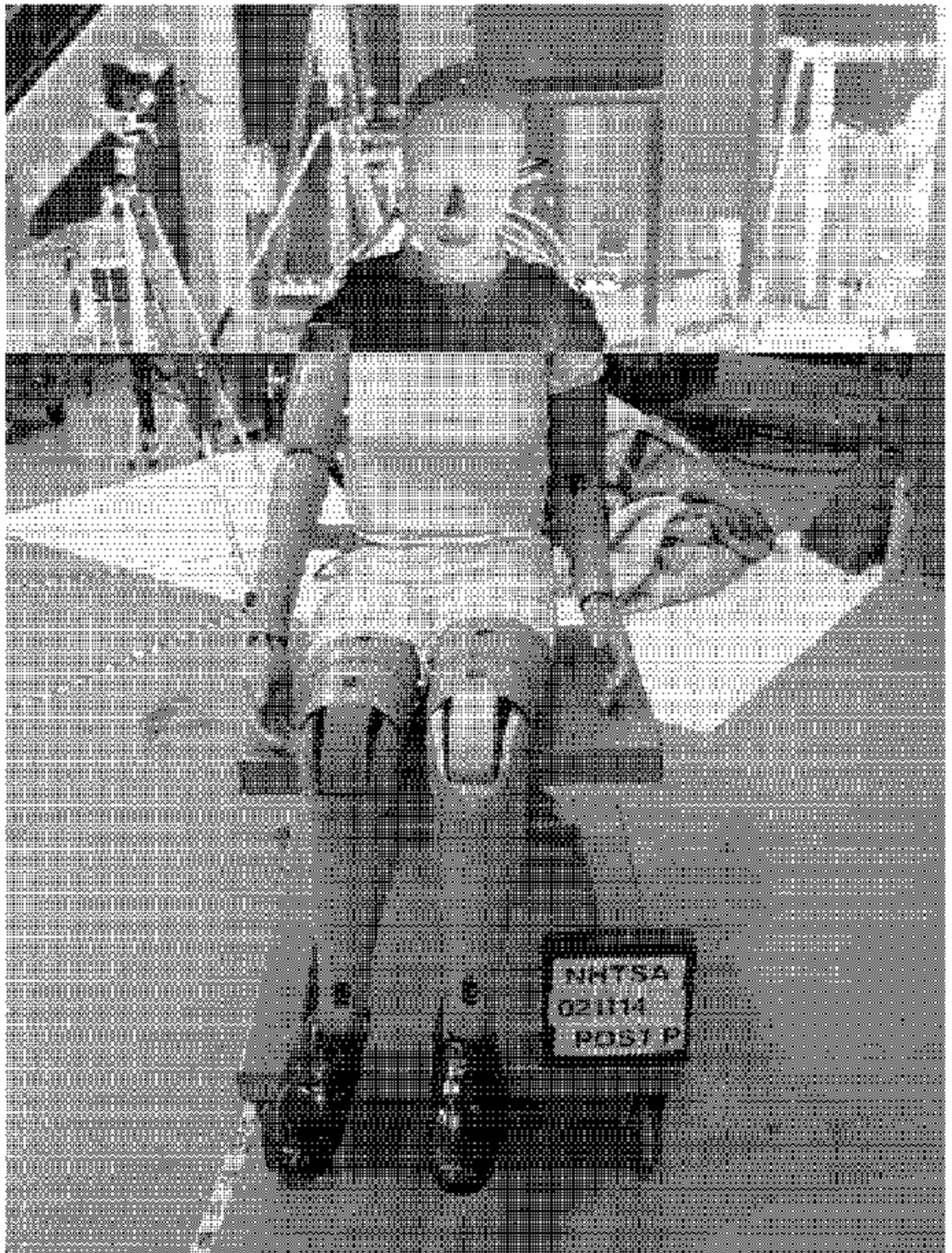


Image 65 Post-Test Passenger Dummy View



Image 66 Post-Test Passenger Dummy Head Contact - View 1

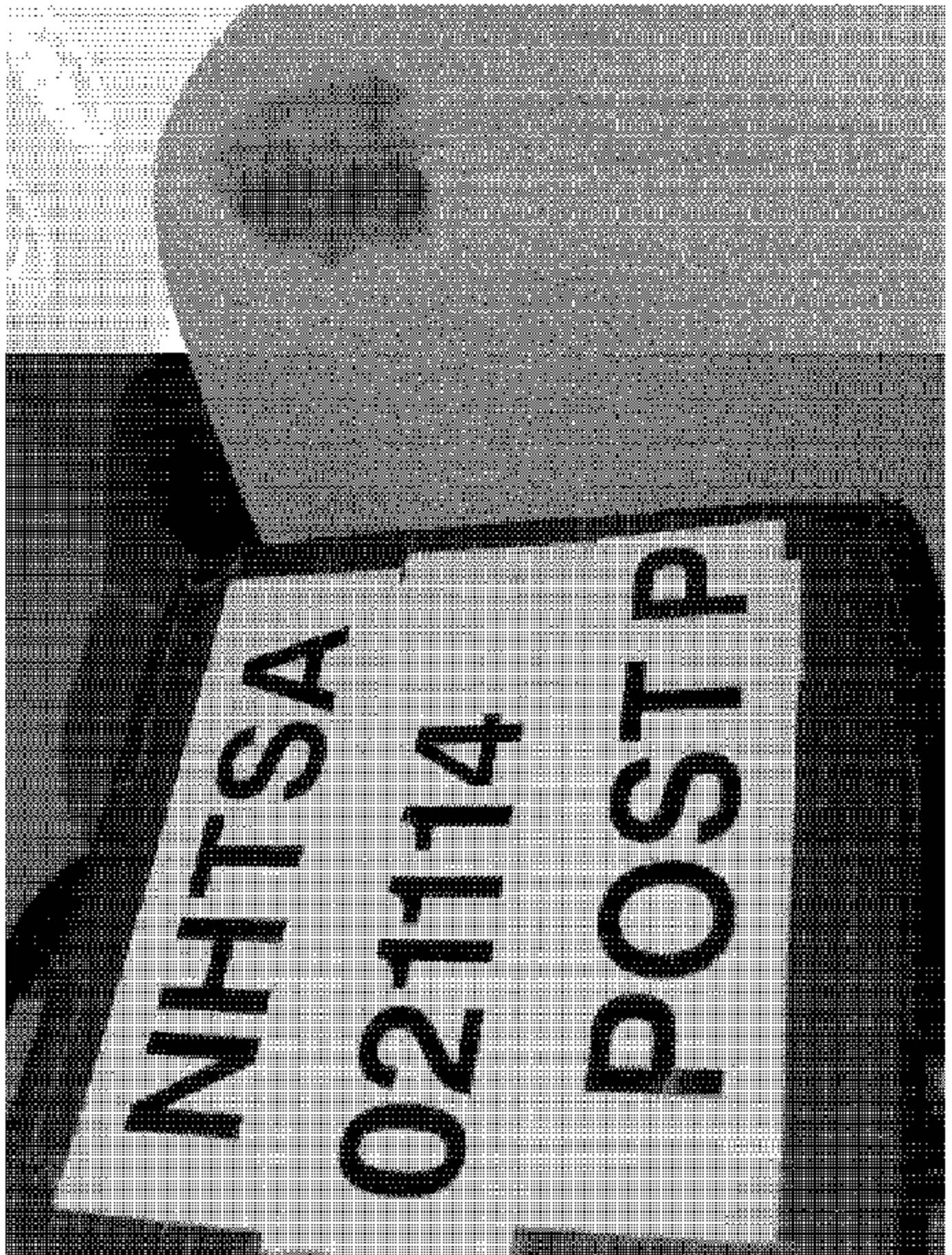


Image 67 Post-Test Passenger Dummy Head Contact - View 2

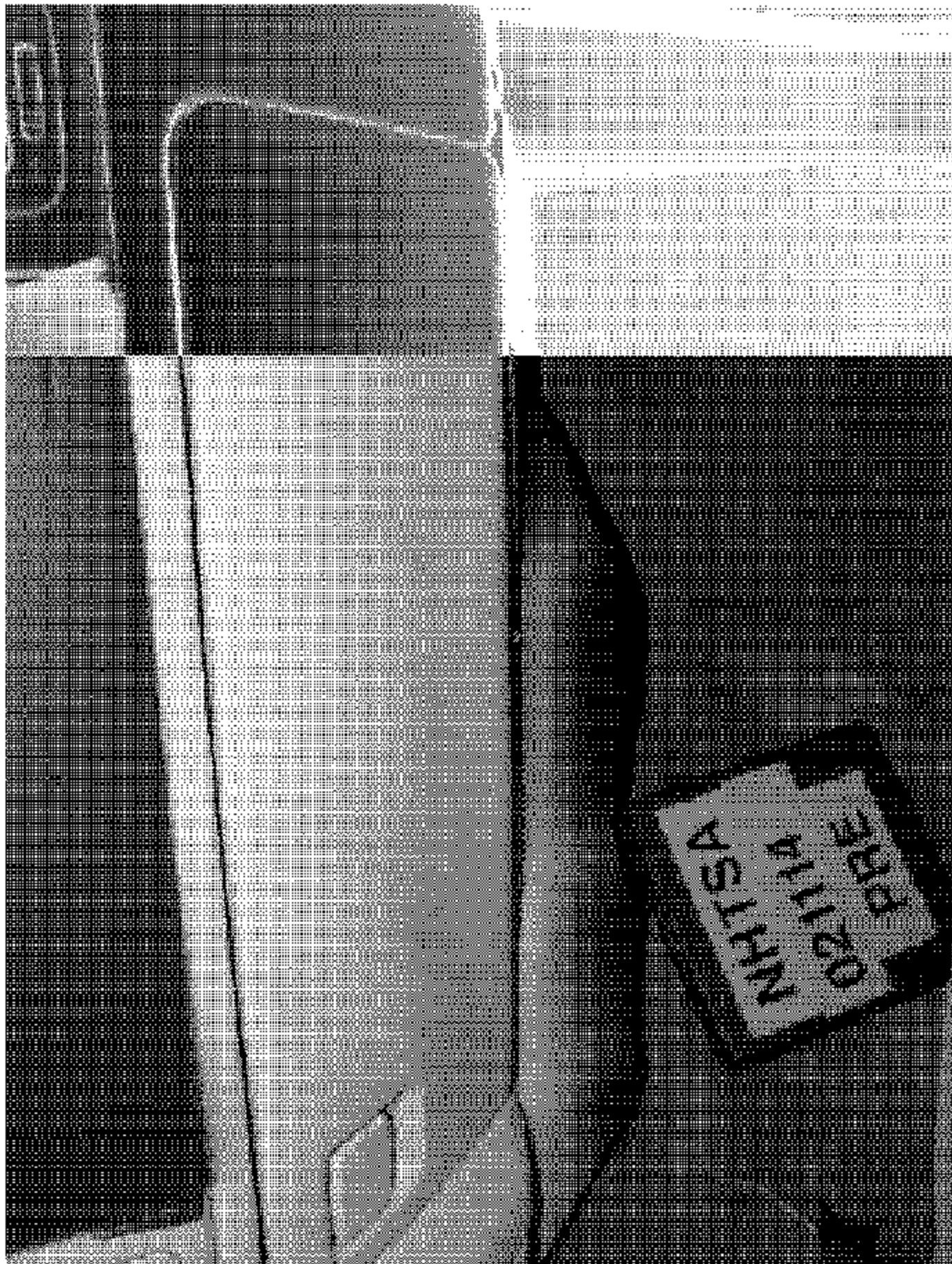


Image 68 Pre-Test Passenger Dummy Knee Bolster View



Image 69 Post-Test Passenger Dummy Knee Contact View

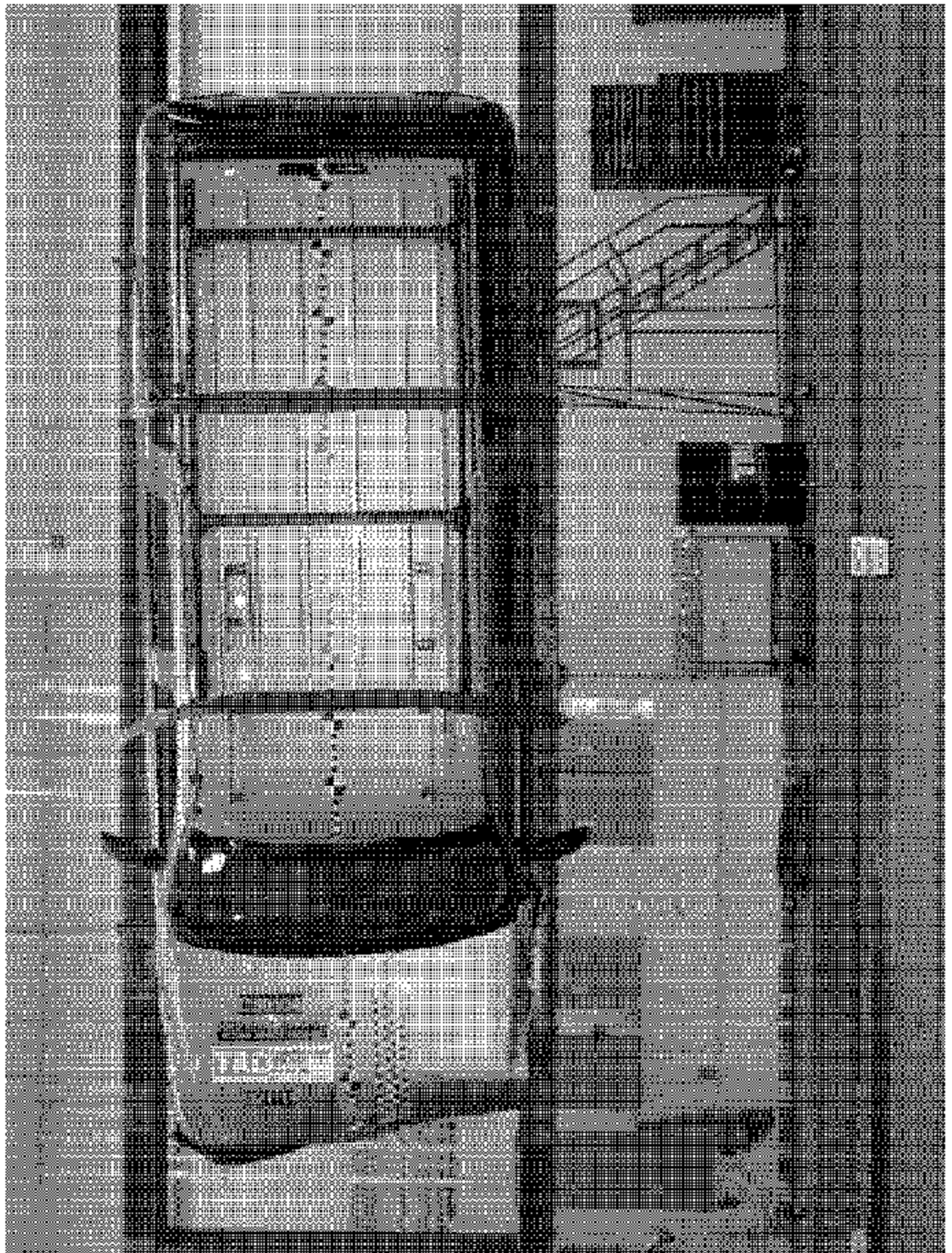


Image 70 Post-Test Vehicle on Static Rollover Device - 90° View



Image 71 Pre-Test Vehicle Ballast View

C300104



MADE BY GENERAL MOTORS DE MEXICO, S. DE R. L. DE C.V. 10202

GVWR 1452KG(3200LB) GVWR FRT 1814KG(4000LB)  
3175KG(7000LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR  
VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF  
MANUFACTURE SHOWN ABOVE

3GNEC16Z53G108730 TYPE N FM

MODEL	C1500	TYPE	N FM	COLD TIRE PRESSURE
EPEN	TIRE SIZE	SPEED RTG	RR	
FRT	P265/70R16	S	18X7J	240KPA(35PSI)
RR	P265/70R16	S	18X7J	240KPA(35PSI)
SPA	P265/70R16	S	18X8.5J	240KPA(35PSI)

SEE OWNER'S MANUAL FOR MORE INFORMATION

Image 72 Pre-Test Vehicle Certification and Recommended Tire Pressure Label View



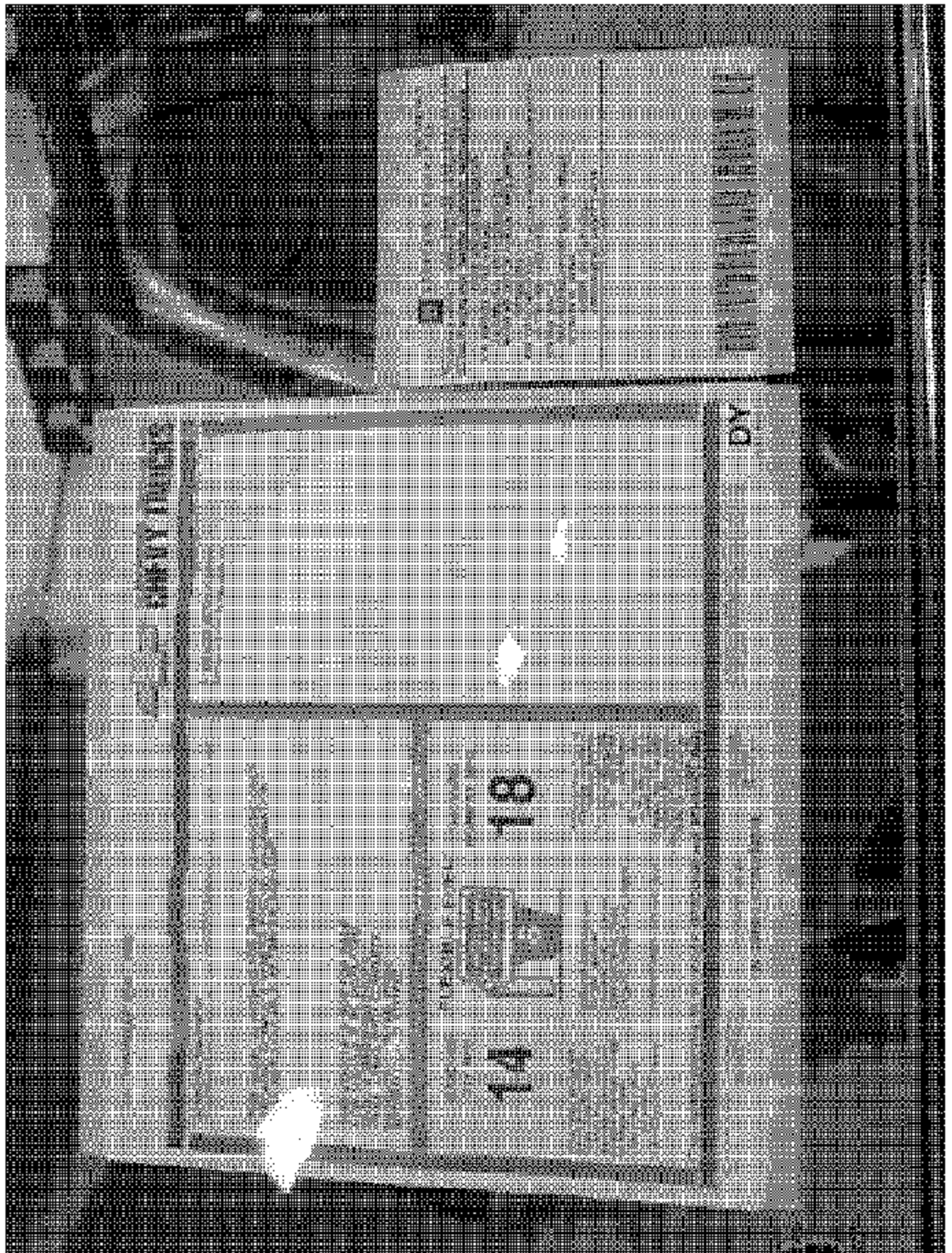


Image 73 Pre-Test Vehicle Window Sticker

## Appendix A

### Test Equipment List and Calibration Information

Dummy 421v(208) Type HYBRID III 5th Manufacturer VRTC - 421v HYBRID III 5th Female (208 Config) ICAL'd 6-2-01(DKS 10-24-02)J21)

Chsname	Location	XModel	Name	Manufacturer	Sens./mV/V/U	Fullscale	Calibrate	Pos Output	Flip
HLDXG	Head Accel X	EGE-73B6Q-20	02102H16-A13	Entran	0.023	g	2000	9/24/02 Rr	1
HEDYG	Head Accel Y	EGE-73B6Q-20	02102H16-A08	Entran	0.0213	g	2000	9/24/02 Lr	1
HEDZG	Head Accel Z	EGE-73B6Q-20	02102H16-A18	Entran	0.0225	g	2000	9/24/02 Up	1
NEKXF	Neck Force X	IF-205	IF-205-180-FX	FTSS	0.00018243	N	8896	3/18/02 Hd Hd,Cst Rr	1
NEKYF	Neck Force Y	IF-205	IF-205-180-FY	FTSS	0.000175596	N	8896	3/18/02 Hd Hd,Cst Rr	0
NEKZF	Neck Force Z	IF-205	IF-205-180-FZ	FTSS	0.000092266	N	13344	3/18/02 Hd Up,Cst Dr	0
NEKXM	Neck Moment X	IF-205	IF-205-180-MX	FTSS	0.005577699	N-m	282.5	3/18/02 Rr Far to Rt Shld	1
NEKYM	Neck Moment Y	IF-205	IF-205-180-MY	FTSS	0.00560124	N-m	282.5	3/18/02 Chn to Strum	0
NEKZM	Neck Moment Z	IF-205	IF-205-180-MZ	FTSS	0.008123478	N-m	282.5	3/18/02 Chn to Lt Shld	0
CSTXG	Chest Accel X	EGE-73B6Q-20	B02A25-N03	Entran	0.02163	g	2000	8/5/02 Fwd	0
CSTYG	Chest Accel Y	EGE-73B6Q-20	02A18-N12	Entran	0.01926	g	2000	8/5/02 Lfr	1
CSTZG	Chest Accel Z	EGE-73B6Q-20	B02A25-N10	Entran	0.01967	g	2000	8/5/02 Up	1
CSTXD	Chest Deflection X	14CBI-2897	14CBI-2897-1355	Servo	1.70969	mm	300	3/25/02 Strum Away Fwd Spu	0
PEVXG	Pelvis Accel X	7264-200LC	AF0K3	Endeven	0.0212	g	2000	8/5/02 Rwd	1
PEVYG	Pelvis Accel Y	EGE-73B6Q-20	02A16-A26	Entran	0.02009	g	2000	8/5/02 Lfr	1
PEVZG	Pelvis Accel Z	EGE-73B6Q-20	02A18-N15	Entran	0.01877	g	2000	8/5/02 Up	1
LFMZG	Left Femur Force Z S37	2430	2430-739	GSE	0.000067676	N	13344	3/18/02 Knee Hd Pel Rr	0
RPMZG	Right Femur Force Z VRTC-4	2430	2430-760	GSE	0.000067069	N	13344	3/18/02 Knee Hd Pel Rr	0

Dummy 426v Type HYBRID III SIE Description VRTC - 426v HYBRID III 5th Female ICAL'd 11-06-01(DKSI11-13-02)J211

Chname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X	7264C-2KLC-2- P17837		Endevco	0.01415 g	2000	11/6/02	Rr	1
HEDYG	Head Accel Y	7264C-2KLC-2- P17559		Endevco	0.0141006 g	2000	11/6/02	Lft	1
HEDZG	Head Accel Z	7264C-2KLC-2- P 5856		Endevco	0.01471 g	2000	11/6/02	Up	1
NEKXF	Neck Force X	IF-205	IF-205-287-FX	FTSS	0.000178125 N	8896.4	11/6/02	Hd Pd,Cst Rr	1
NEKYP	Neck Force Y	IF-205	IF-205-287-FY	FTSS	0.000171009 N	8896.4	11/6/02	Tld Ld,Cst Rr	0
NEKZF	Neck Force Z	IF-205	IF-205-287-FZ	FTSS	0.000090426 N	13344.6	11/6/02	ltd Up,Cst Dn	0
NEKXM	Neck Moment X	IF-205	IF-205-287-MX	FTSS	0.005443186 N-m	282.5	11/6/02	Rt Rar to Rt Shld	0
NEKYM	Neck Moment Y	IF-205	IF-205-287-MY	FTSS	0.005449912 N-m	282.5	11/6/02	Chin to Stron	0
NEKZM	Neck Moment Z	IF-205	IF-205-287-MZ	FTSS	0.008 N-m	282.5	11/6/02	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264C-2KLC-2- P16194		Endevco	0.0140458 g	2000	11/6/02	Fwd	0
CSTYG	Chest Accel Y	7264C-2KLC-2- P16517		Endevco	0.01507 g	2000	11/6/02	L-T	1
CSTZG	Chest Accel Z	7264C-2KLC-2- P16428		Endevco	0.0148929 g	2000	11/6/02	Up	1
CSTXD	Chest Deflection X	14C31-2897	14C31-2897-1392	Servo	1.6878 mm	100	11/13/02	Strun Away Frm Spn	0
LFMZP	Left Femur Force Z #2	2121	2121-0257	Denton	0.000100745 N	13344.6	11/6/02	Knee Hd Pd Rr	0
RPMZF	Right Femur Force Z #12	2121	2121-0258	Denton	0.000099478 N	13344.6	11/6/02	Knee Pd Pd Rr	0

# Channel Report

11/14/2002 8:06:53 AM

Chan.#	Sensor #	Name of Test	021114	System	MINIDAU	Name of DAU	DATA	Pol. Cal.	Group	Mfg.	Model
0001	EVENT	SYNCA	SYNCA								
0002	02102116-A13	HEADXG1	Head Accel X								
0003	02102116-A08	HEADYG1	Head Accel Y								
0004	02102116-A18	HEADZG1	Head Accel Z								
0005	IF-205-180-FX	NEKXF1	Neck Force X								
0006	IF-205-180-FY	NEKYF1	Neck Force Y								
0007	IF-205-180-FZ	NEKZF1	Neck Force Z								
0008	IF-205-180-MX	NEKXM1	Neck Moment X								
0009	IF-205-180-MY	NEKYM1	Neck Moment Y								
0010	IF-205-180-MZ	NEKZM1	Neck Moment Z								
0011	B02A25-N03	CSTXG1	Chest Accel X								
0012	02A18-N12	CSTYG1	Chest Accel Y								
0013	B02A25-N10	CSTZG1	Chest Accel Z								
0014	14CB1-2897-135	CSTXD1	Chest Deflection X								
0015	2430-739	LFMZP1	Left Femur Force Z	S37							
0016	2430-760	RFMZP1	Right Femur Force Z	VRTC 4							
0017	P17837	HEADXG2	Head Accel X								
0018	P17559	HEADYG2	Head Accel Y								
0019	P15856	HEADZG2	Head Accel Z								
0020	IF-205-287-FX	NEKXF2	Neck Force X								
0021	IF-205-287-FY	NEKYF2	Neck Force Y								
0022	IF-205-287-FZ	NEKZF2	Neck Force Z								
0023	IF-205-287-MX	NEKXM2	Neck Moment X								
0024	IF-205-287-MY	NEKYM2	Neck Moment Y								
0025	IF-205-287-MZ	NEKZM2	Neck Moment Z								
0026	P16194	CSTXG2	Chest Accel X								
0027	P16517	CSTYG2	Chest Accel Y								
0028	P16428	CSTZG2	Chest Accel Z								
0029	14CB1-2897-139	CSTXD2	Chest Deflection X								
0030	2121-0257	LFMZP2	Left Femur Force Z	#2							

# Channel Report

11/14/2002 8:06:53 AM

0031	2121-0258	RPMZF2	Right Femur Force Z #12	Knee	20026.718	N	11/6/2002	OK	426v	Denton	2121
0032	131779	LSXXG	LEFT REAR SEAT	PWD	977.13653	E	10/28/2002	OK	-1	Undeco	7264-200017

# Channel Report

11/14/2002 8:06:53 AM

Name of Test		021114	System	MINIDAU	Name of DAU		DAUR			
Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	A8511	LSXYG	LEFT REAR SEAT	RT	1001.2515	+	6/19/2002	OK	-1	Endevco
0002	J15067	RSXXG	RIGHT REAR SEAT	FWD	995.95393	+	11/5/2002	OK	-1	Endevco
0003	J19454	RSXYG	RIGHT REAR SEAT	RT	1025.0045	+	11/5/2002	OK	-1	Endevco
0004	J36226	TENXG	TOP OF ENGINE X-AXIS	FWD	1500.5531	-	9/10/2002	OK	-1	Endevco
0005	ACCM49	BENXG	BOTTOM OF ENGINE X-AXIS	FWD	1498.1273	+	5/23/2002	OK	-1	Endevco
0006	J11642	RFCXG	RIGHT FRONT BRAKE	FWD	1075.0045	+	11/5/2002	OK	-1	Endevco
0007	F33701	LFCXG	LEFT FRONT BRAKE	RR	1013.7007	-	10/31/2002	OK	-1	Endevco
0008	J44082	DPCXG	INSTRUMENT PANEL TOP	RR	1000.1562	-	10/30/2002	OK	-1	Endevco
0009	A1598	RDKZG	REAR DECK Z-AXIS	UP	994.36783	-	11/5/2002	OK	-1	Endevco

# Shunt Measurement after Test

Name of Test 021114

2002-11-14 16:24:13

Name of	Name of	Channel	Shunt 1			Shunt 2 (-)			Shunt 3 (+) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
			Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang
DAUA	EVENT	0001												
DAUA	02102116-A13	0002	3.000	3.167	Yes									
DAUA	02102116-A08	0003	3.000	3.165	Yes									
DAUA	02102116-A18	0004	3.000	3.170	Yes									
DAUA	IF-205-180-FX	0005	3.700	3.714	No									
DAUA	IF-205-180-FY	0006	3.700	3.710	No									
DAUA	IF-205-180-FZ	0007	3.700	3.679	No									
DAUA	IF-205-180-M	0008	3.700	3.721	No									
DAUA	X													
DAUA	IF-205-180-M	0009	3.700	3.710	No									
DAUA	Y													
DAUA	IF-205-180-M	0010	3.700	3.667	No									
DAUA	Z													
DAUA	B02A25-N03	0011	3.000	3.161	Yes									
DAUA	02A18-N12	0012	3.000	3.164	Yes									
DAUA	B02A25-N10	0013	3.000	3.168	Yes									
DAUA	14C.B1-2897-1	0014	5.000	3.365	Yes									
DAUA	355													
DAUA	2430-739	0015	3.700	3.735	No									
DAUA	2430-760	0016	3.700	3.719	No									
DAUA	P17837	0017	3.000	3.147	Yes									
DAUA	P17559	0018	3.000	3.166	Yes									
DAUA	P15856	0019	3.000	3.145	Yes									
DAUA	IF-205-287-FX	0020	2.700	3.707	No									
DAUA	IF-205-287-FY	0021	3.700	3.719	No									
DAUA	IF-205-287-FZ	0022	3.700	3.675	No									
DAUA	IF-205-287-M	0023	3.700	3.712	No									
DAUA	X													
DAUA	IF-205-287-M	0024	3.700	3.716	No									
DAUA	Y													



Name of	Name of	Channel	Shunt 1			Shunt 2 (-)			Shunt 3 (-) [K3600 only:]			Shunt 4 ( ) [K3600 only:]		
			Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang
DAUA	1R-205-287-M Z	0025	3.700	3.662	No									
DAUA	P16194	0026	3.000	3.154	Yes									
DAUA	P16517	0027	3.000	3.142	Yes									
DAUA	P16428	0028	3.000	3.145	Yes									
DAUA	14CB1-2897-1 392	0029	5.000	3.173	Yes									
DAUA	2.21-0257	0030	3.700	3.683	No									
DAUA	2.21-0258	0031	3.700	3.695	No									
DAUA	131770	0032	3.000	3.078	Yes									
DAUB	A85JJ	0001	3.000	2.782	Yes									
DAUB	J15067	0002	3.000	2.702	Yes									
DAUB	110454	0003	3.000	2.688	Yes									
DAUB	136226	0004	3.000	3.313	Yes									
DAUB	ACCM9	0005	3.000	2.410	Yes									
DAUB	111642	0006	3.000	2.807	Yes									
DAUB	135701	0007	3.000	2.750	Yes									
DAUB	J41082	0008	3.000	2.869	Yes									
DAUB	AJ598	0009	3.000	2.826	Yes									

# Shunt Measurement before Test

Name of Test 021114

2002-11-11 15:53:20

DAU	Sensor	Channel	Shunt 1 (+)		Shunt 2 (-)	Shunt 3 (+) [K3600 only:]		Shunt 4 (-) [K3600 only:]	
			Reference Voltage /	Shunt Value /	Reference Voltage /	Reference Voltage /	Shunt Value /	Reference Voltage /	Shunt Value /
				Range			Range		Range
DAUA	EVENT	0001							
DAUA	02102116-A13	0002	3.000	3.169	Yes				
DAUA	02102116-A08	0003	3.000	3.167	Yes				
DAUA	02102116-A18	0004	3.000	3.171	Yes				
DAUA	IF-205-180-FX	0005	3.700	3.714	No				
DAUA	IF-205-180-FY	0006	3.700	3.711	No				
DAUA	IF-205-180-FZ	0007	3.700	3.679	No				
DAUA	IF-205-180-M	0008	3.700	3.721	No				
	X								
DAUA	IF-205-180-M	0009	3.700	3.710	No				
	Y								
DAUA	IF-205-180-M	0010	3.700	3.667	No				
	Z								
DAUA	B02A25-N03	0011	3.000	3.162	Yes				
DAUA	02A18-N12	0012	3.000	3.163	Yes				
DAUA	B02A23-N10	0013	3.000	3.166	Yes				
DAUA	14CB1-2897-1	0014	5.000	3.339	Yes				
	355								
DAUA	2430-739	0015	3.700	3.735	No				
DAUA	2430-760	0016	3.700	3.719	No				
DAUA	P17837	0017	3.000	3.148	Yes				
DAUA	P17559	0018	3.000	3.163	Yes				
DAUA	P15856	0019	3.000	3.145	Yes				
DAUA	IF-205-287-FX	0020	3.700	3.706	No				
DAUA	IF-205-287-FY	0021	3.700	3.719	No				
DAUA	IF-205-287-FZ	0022	3.700	3.674	No				
DAUA	IF-205-287-M	0023	3.700	3.712	No				
	X								
DAUA	IF-205-287-M	0024	3.700	3.716	No				
	Y								

DAC	Sensor	Channel	Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (-) [K3600 only:]			Shunt 4 (-) [K3600 only:]		
			Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang
DAUA	1F-205-287-M Z	0025	3.700	3.662	No									
DAUA	P16194	0026	3.000	3.156	Yes									
DAUA	P16517	0027	3.000	3.143	Yes									
DAUA	P16428	0028	3.000	3.146	Yes									
DAUA	14CB1-2897-1 392	0029	5.000	3.168	Yes									
DAUA	2121-0257	0030	3.700	3.683	No									
DAUA	2121-0258	0031	3.700	3.695	No									
DAUA	J31779	0032	3.000	3.084	Yes									
DAUB	A85JJ	0001	3.000	2.787	Yes									
DAUB	J15067	0002	3.000	2.703	Yes									
DAUB	J10454	0003	3.000	2.690	Yes									
DAUB	J36226	0004	3.000	3.320	Yes									
DAUB	ACCM9	0005	3.000	2.414	Yes									
DAUB	J11642	0006	3.000	2.817	Yes									
DAUB	J33701	0007	3.000	2.754	Yes									
DAUB	J41082	0008	3.000	2.874	Yes									
DAUB	AJ598	0009	3.000	2.841	Yes									